

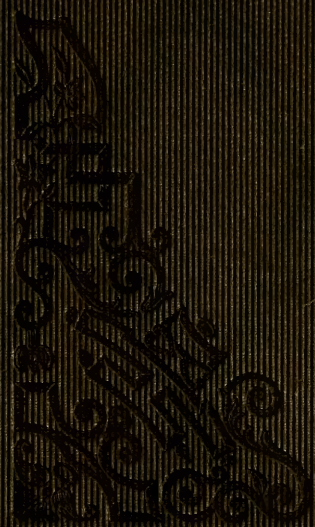
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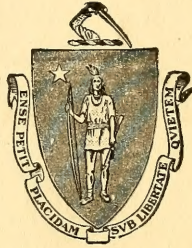


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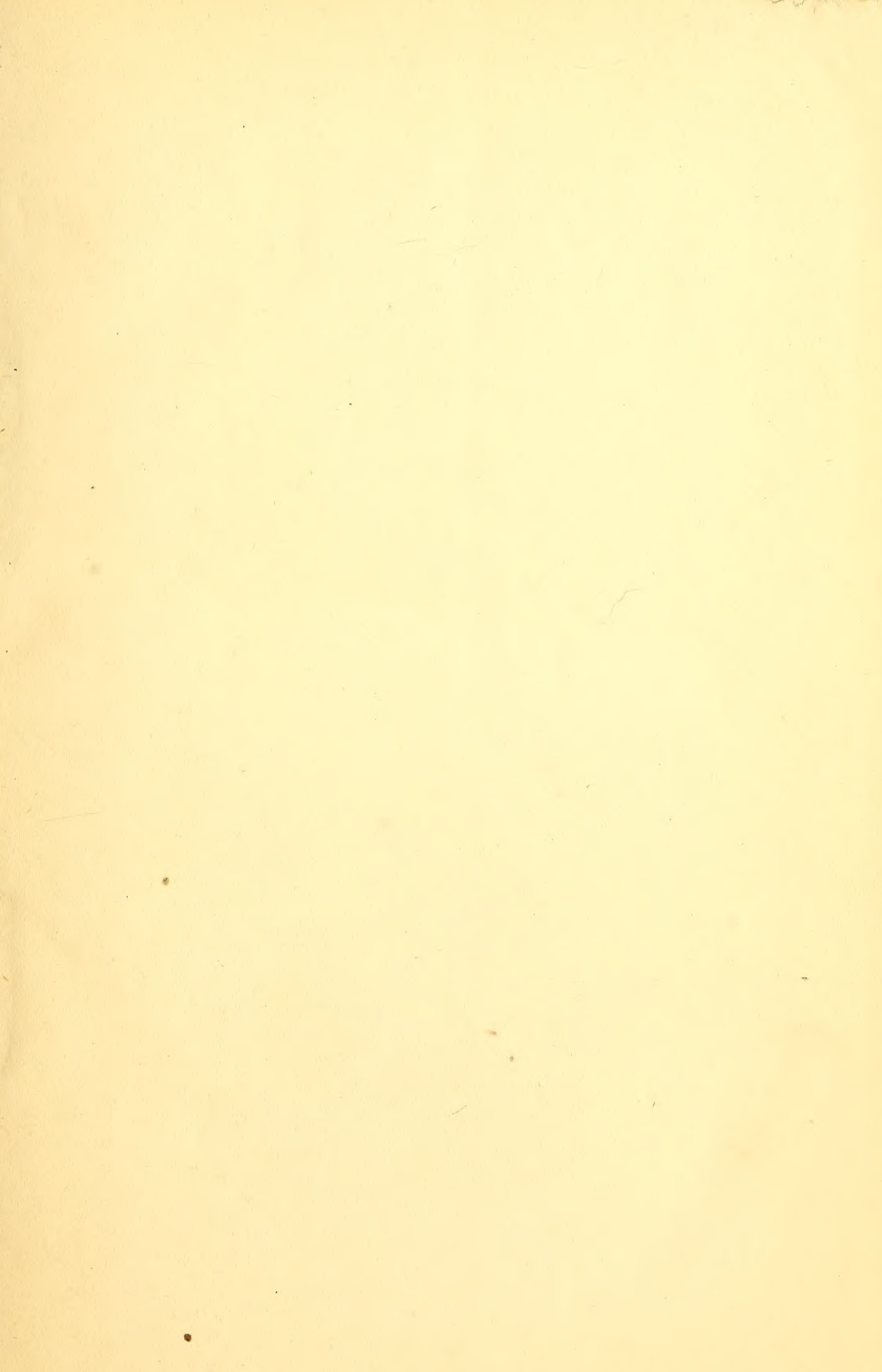
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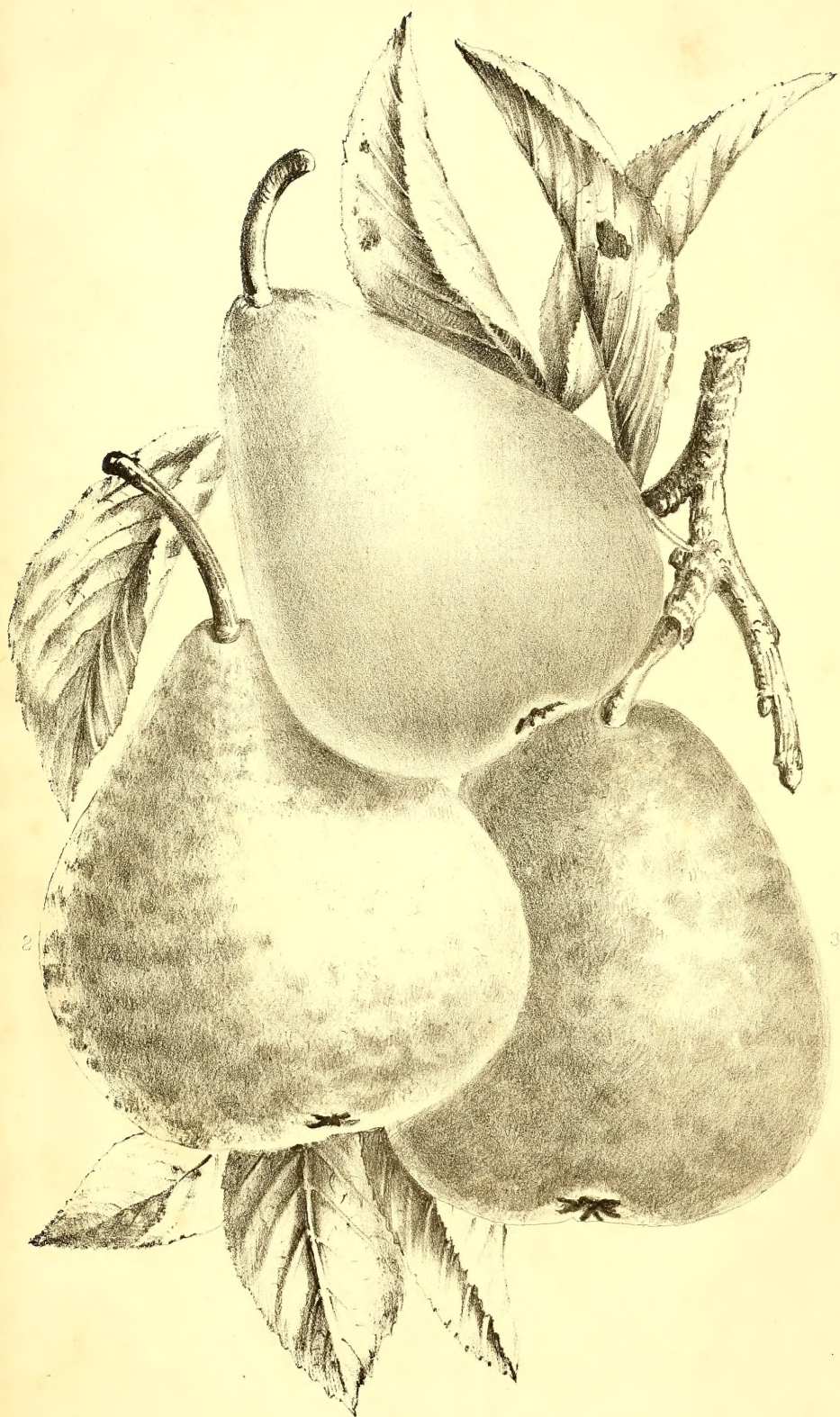
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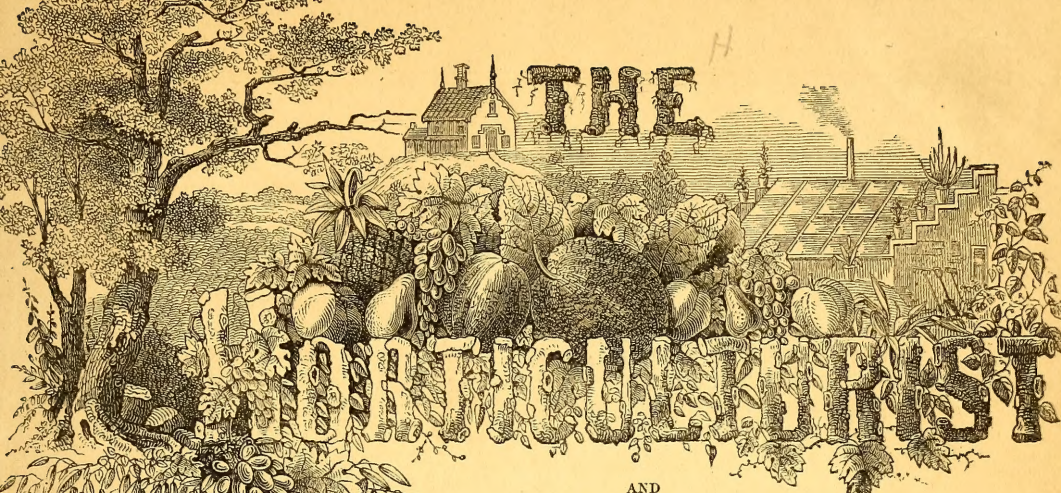






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THE HORTICULTURIST AND JOURNAL

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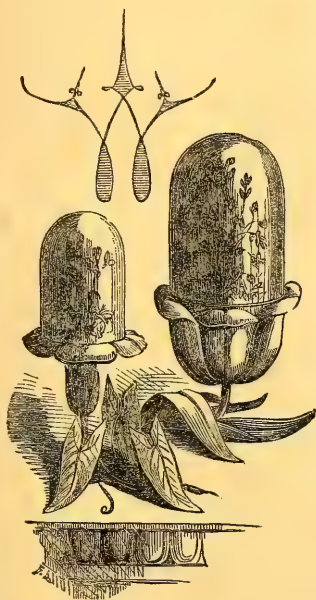
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Parlour Cultivation—Ferns.

"In princely halls and courts of kings
Its lustrous ray the diamond flings,
Yet few of those who see its beams,
Amid the torchlight's dazzling gleams,
As bright as though a meteor shone,
Can call the costly prize their own;
But gems of every form and hue
Are glittering here in morning dew;
Jewels that all alike may share
As freely as the common air."



We are glad to see that the taste which has sprung up among the ladies for hanging baskets of growing plants, is extending itself to Wardian cases and Aquariums. We would not insinuate that a cultivated woman was not the greatest attraction a drawing-room can present; but when we see adornments of living plants in a living apartment, the first impression that a cultivated mind inhabits it is rarely erroneous. No matter how simple the vase, or how common the flower, if the first is neat and the second in health, we know that it is a matter of interest; we also soon discover that cultivation of the mind is in progress; that the caretaker reads, observes as she goes, and enjoys accordingly. A plate of moss under a simple glass vase, or even exposed and well sprinkled thrice a day, attracts us; and we feel at home here, a thousand times more than in the presence of gilded furniture or the most expensive or-molu ornaments.

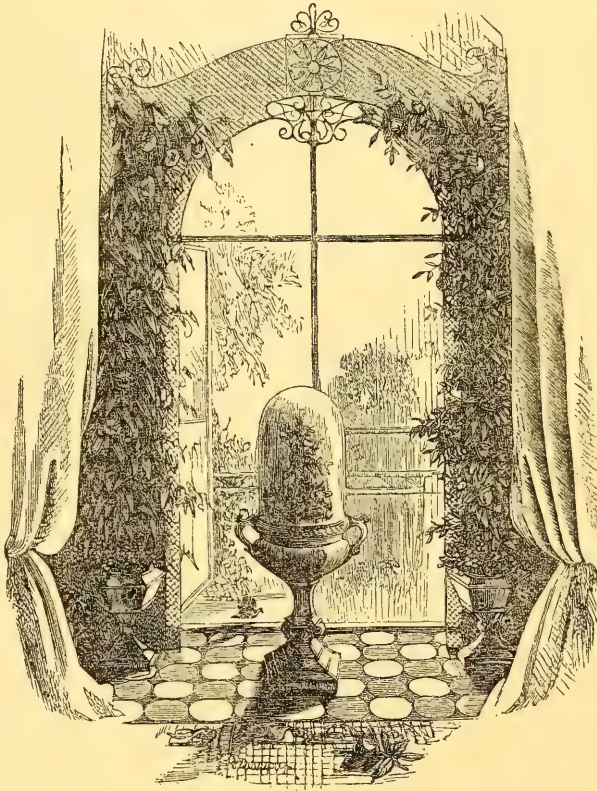
When once the mind receives pleasure from such cultivation as can be accomplished within doors, it is surprising how readily we learn the simple conditions of health which plants require; that difficulty conquered the pleasure daily grows by success, and *home* becomes a place of delight; the aid of books brings new thoughts, new pleasures; the possessor no longer seeks in vain show, admiration from abroad; her love turns to her pets whose daily progress is the theme of thoughts gradually growing in intensity till curiosity is awakened, and she gains a life-long pleasure in the study of nature's works; exclaims "Who would live contentedly, or consider a sitting-room furnished, without either a Ward's case or an Aquarium?"

As to outlay and trouble of management these are the cheapest and most interesting adornments of a dwelling-house. The expense may be considered at an end when the case has been purchased and stocked; after that the less it is touched the better; dust cannot creep into its crevices, to mar the freshness of the gems within, while daily, whether in library or boudoir it is an object of intense interest.

A simple plan is to procure a vase of any material and throw over it a glass shade, as represented. Ferns grown within, exceed greatly the beauty of those grown in the open air. Though we cannot have the moun-

tain dells, the creeping woodbine coverts or the rocky water-fall, we may have the emblems of them in our little rural paradise; we may have the Ferns to suggest such things when frost and snow cover all nature's bosom, and to keep in remembrance the pleasures of the scenes of spring; remembrances of fragrance from the green world that sweeten the oft otherwise weary pilgrimage in the march of life.

It must be a pure and simple taste which finds pleasure in the culture of plants with no gaudy blossoms to attract vulgar remark, which have few claims on our attention beyond their botanical interest, and chaste, simple, outlines, their rare shades of green and brown, and methods of growth



neither noticed nor cared for by minds unschooled to simple elegance and exquisite delicacy of form.

Procure your ferns in country rambles in the vicinity of the woods, along the banks of brooks where there are many decayed tree trunks, and amongst rocks. In removing these it is necessary to dig out the root-stock in as complete and uninjured a state as possible, and if a portion of the soil can be brought away with the plant it is all the better. A tin box to bring them home in, covered over with wet moss, is useful; plant as speedily as possible, using potsherds for drainage, keep them in the shade, and moisten the earth occasionally. The small ferns are most suitable for parlour culture.

In gardens, select a shady, moist situation, and with a little care you may have as fine a hardy fernery as you can desire. The soil which suits most ferns, is three parts of rather light fibry earth, and one part fibry loam; but the beginner cannot err who employs the earth the plant was found luxuriating in out of doors. It need not be made fine, but used on the surface in pieces varying in size, the finer near the roots, the surface as rough as in nature's treasury.

We do not urge these pleasures on any; but certain we are, that few more refining ones can be pursued. The mind gradually learns

"To mark the structure of a plant or tree,
And all fair things of earth, how fair they be."

CHARLES LAMB.

A few good specimens of mosses add greatly to the appearance of a fernery, particularly if some of the scarlet caps be introduced. Ferns and mosses seem naturally to be inseparable companions, and should not be parted; a fact enunciated in the following lines, which contain a valuable moral:

FERNS AND MOSSES;

OR, THE LINKS BY WHICH SOCIETY IS HELD TOGETHER.

"There was Fern on the mountain, and Moss on the moor—
The Ferns were the rich, and the Mosses the poor;
And the glad breeze blew gaily—from heaven it came—
And the fragrance it shed over each was the same;
And the warm sun shone brightly, and gilded the Fern,
And smiled on the lowly born Moss in its turn;
And the cool dews of night on the mountain Fern fell,

And they glistened upon the green Mosses as well.
And the Fern loved the mountain, the Moss loved the moor
For the Ferns were the rich, and the Mosses the poor.
But the keen blast blew bleakly, the sun waxed high—
Oh! the Ferns they were broken, and withered, and dry;
And the Moss on the moorland grew faded and pale;
And the Fern and the Moss shrank alike from the gale.
So the Fern on the mountain, the Moss on the moor,
Were withered and black where they flourished before.
Then the Fern and the Moss they grew wiser in grief,
And each turned to the other for rest and relief;
And they planned that wherever the Fern roots should grow,
There surely the Moss must live sparkling below.
And the keen blast blew bleakly, the sun waxed fierce—
But no winds and no sun to their cool roots could pierce,
For the Fern threw her shadow the green Moss upon,
Where the dew ever sparkled undried by the sun;
When the graceful Fern trembled before the keen blast,
The Moss guarded her roots till the storm wind had passed.
So no longer the wind parched the roots of the one,
And the other was safe from the rays of the sun.
And thus, and for ever, where'er the Ferns grow,
There surely the Mosses lie sparkling below;
And thus they both flourish where nought grew before,
And both deck the woodland, the mountain, and moor."



THE NEW GRAPES.

BY CHARLES DOWNING, NEWBURGH, NEW YORK.

I PROPOSE to offer a few remarks concerning some of the new recently-introduced native grapes, because there are contradictory opinions advanced of some of them that are pretty well established here.

DELAWARE—First I would notice the Delaware as that at least has been more fully tested than the others. When I first saw it (some five or six years since) I was so favorably impressed with its beauty and excellence, that I immediately procured a vine and recommended it to my friends, being confident from the ripening of the wood almost to the ends of the shoots, that it would prove hardy and be an acquisition on account of its earliness as a first-rate table and dessert fruit, profitable for marketing and vineyard culture. At first it was small in berry and bunch and apparently but a feeble grower, having been subjected for many years to unfavorable circumstances which had dwarfed its habit, but not entirely obscured its excellence. But our friend A. Thompson of Delaware, Ohio, who under such unfavorable circumstances did not fail to detect its fine qualities, and who first brought into notice, deserves the thanks of every lover of good fruit. And now that the prediction made to my friends upon its first introduction has been more than realized, I will venture another; that is, the time is not far distant, perhaps at our next Pomological Congress, when all will esteem it a pleasure to award praise to a deserving public benefactor. It is not, too, a feeble grower and so unproductive as has been represented, as a few statistics will show. My own vine, without any extra cultivation, has made a fine growth of well ripened wood, and presented a mass of thoroughly ripened fruit, such as is seldom seen on any other native variety of the same age; but before I counted the bunches they were stolen and the loss keenly felt. My adjoining neighbor has a vine four years old which has borne this season 70 bunches of well ripened fruit proving very satisfactory, and \$100 was offered for the vine but refused. Another neighbor, on a vine of five years of age with twenty shoots averaging ten feet in length, has 60 bunches, that for size and beauty were a sight worth going many miles to see. Another adjoining neighbor has vines commencing to bear freely, and last fall he showed his opinion of the grape and his regard for a most interesting family of children, by purchasing fifty more Delaware vines for his family use; they were good vines and well treated, and under such management never disappoint the grower. Of the quality of its fruit all who became acquainted with it agree in awarding it the highest praise; it is sugary, aromatic, and refreshing, and never cloy.

DIANA.—Of the Diana it would seem superfluous to speak; still its character is often misunderstood, and it is often called a feeble grower; whereas it is one of the most vigorous; and that, with its disposition to early overbearing, is its chief fault. From a good stock its bunches and berries are even at its first bearing large, but the fruit improves greatly in size and quality and gains much in earliness as the vines acquire age. It begins to color and be very good to eat almost as early as the Delaware, but does not, like that, hasten to full maturity and on the deep, rich, dry soil in which it delights it will continue to improve to the end of our longest and driest seasons, when its fine qualities will surprise those who have only been acquainted with the Isabella and Catawba.

Both this and the Delaware must still be regarded as in the progressive state, each season more fully developing their superior qualities ; and the past and present season, so unfavorable for developing the flavor of grapes has afforded us the test to place them in the highest rank.

The HERBEMONT has been long known and highly prized at the South, particularly in Georgia and Carolina ; but is very little known north of Delaware, although forty miles north of New York it has done well the two past unfavorable seasons ; and a vine in Newburgh, in a sheltered yard, has not failed for years of giving most abundant crops of delicious, spicy fruit, whose berries are bags of sweet wine. The Herbemont, besides giving excellent fruit, is valuable for ornamental purposes ; being unequaled in vigor, and beautiful in its wood and foliage. It needs protection in winter and will not generally ripen its fruit in the open ground north of New York, except in sheltered situations. In consequence of its greater vigor it requires more room than other varieties.

ANNA.—I am now inclined to say a few words respecting one that is not yet fully before the public ; I refer to the Anna ; and it might properly be called the Anna Muscat, as the flavor reminds one of the Muscat of Alexandria. It fruited for the first time while my late brother was living, who thought highly of it, as well for its high flavor as for its beauty and color. The vine was purchased and removed, and like the removal of most old vines did not succeed well, giving no good fruit and not very healthy wood. I have observed its progress during the past few years with much interest. The vines that have been grown from it are vigorous and healthy in habit, much like Catawba, but with a thicker and more firmly fleshed leaf, which enables it better than any other except Delaware, to resist mildew. It also ripens its wood early and has so far proved perfectly hardy. Its bunches and berries are large and only moderately compact in this respect, much like Catawba, peculiarly dotted and covered with a fine bloom. The color varies from greenish to pearly white, and sometimes light amber. The flesh is juicy and has generally a considerable degree of adhesiveness at its centre, but much less acidity than the Catawba. The flavor is rich and peculiar, but sugary, vinous, and spicy, with a fine pleasant aroma. It ripens fully as early as the Isabella ; but like the Catawba, continues to improve to the end of the longest season.

REBECCA, which formerly promised so highly, I must not fail to notice by an encouraging word. Notwithstanding the difficulties it has had to contend with (and excessive propagation is the greatest), yet I believe that any one who gets a good taste of this fine and very rich fruit will be unwilling to be without it. The past remarkably unfavorable season has caused some mildew to its leaves, but not more than to that old standard the Isabella ; and this should cause little distrust to its value, because when the vines become older and stronger they will be better able to withstand the changes of the seasons. Its foliage is not very abundant, consequently its fruit bearing should be moderated by thinning, and its treatment should be that of a garden rather than of an open vineyard variety. It is still new, and not fully tested out of the garden, in which it originated, and requires time to enable it to take rank as the American Chasselas.

HARTFORD PROLIFIC.—At the meeting of the Pomological Society held at Rochester in 1856, I spoke somewhat in praise of this grape, as it appeared to be underrated by many of the members who compared it with Charter

Oak, &c. I consider it valuable, chiefly for its hardiness, abundant bearing and earliness, as it ripened this season earlier than any other variety in my collection. In quality it does not equal Isabella, but is desirable to come in for early marketing in small quantities and especially for the north. There is, however, an objection to it: as soon as *fully* ripe it drops from the bunch.

UNION VILLAGE.—This variety has not yet fruited here; it is very vigorous in its growth, but so far as tested, has not proved as hardy as the other native grapes, but it may become so when fully established. Its fruit is larger than Isabella and a little earlier.

YORK MADEIRA.—A hardy grape, ripening its wood well, growth moderately vigorous, very productive; bunch and berry of medium size, very compact, of pretty good quality, ripening a few days before Isabella. HYDE'S ELIZA, CANBY'S AUGUST, and also BALDWIN'S EARLY, as I have received it, so strongly resemble the above as to lead to the opinion that they are identical with it.

CLARA.—This new grape has just commenced bearing, and gives promise of much excellence. It is vigorous and appears hardy; bunch large; berry good size, color white and flavor excellent. It requires more time to give a decided opinion of its real value, but I think highly of it at present.

WINTER FLOWERS—THE OXALIS.

This beautiful tribe of plants, deserve more attention than they generally receive. As winter flowering green-house plants we value them very highly; and they bloom most profusely even where the temperature is not kept sufficiently warm to flower heliotropes. We place great value on them and the Chinese Primrose for green-house blooming, as both are easily managed and flower well, without extra care or cultivation.

Sometime during the month of September we shake out the bulbs from the pots they have occupied during summer, and having prepared some good potting soil (we use rotted sods as our only compost or soil for potting all our plants) the roots are set in 4 or 6-inch pots; we usually place the smaller growing kinds rather thickly, as they sooner fill up the pot, but finer flowers are produced from good sized single roots. After potting, they are set in the green-house, on the front shelf, or anywhere most convenient, as they will not begin to form leaves for a week or two.

Very little water is required at this period, indeed for a week or two the soil will afford sufficient moisture, if watered immediately after planting. Wet soil will prove very injurious and prevent the growth of roots, but when the soil is rather dry the bulbs seem to root more readily and they certainly grow with more vigor; a good and regular supply of water will be requisite when once the growth has become vigorous and the foliage plentiful. After they are over the flowering period, less water will again be requisite, and a period of rest follows the dying down of the foliage, during which time the soil should not be watered, unless the pots are fully exposed to the sun, we plunge them in the soil, behind an arborvitæ hedge, where they rarely receive any further care until we look them up for potting in September.

There are numerous kinds, all are pretty; many of them, such as Bowii, exceedingly so. *O. hirtella*; *O. lutea*; *O. pulchella*; *O. lepida*; *O. purpurea*; *O. rubro-flava*; *O. geniculata*, and *O. versicolor*, are some of the best that we have been able to flower from time to time.—W., *Bloomhill*.

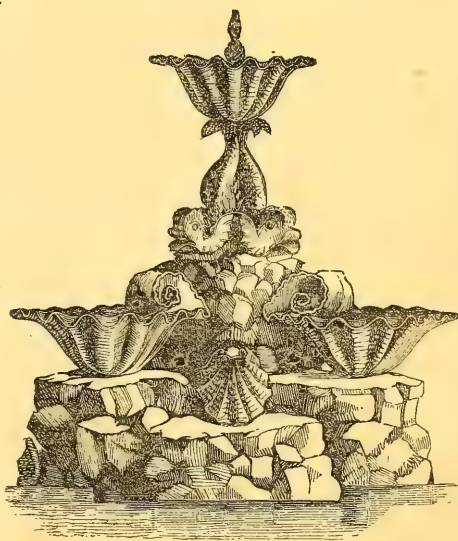
PATENT SILICIOUS STONE, ETC.

THIS material appears to have become a considerable article of manufacture at Ipswich, in Suffolk, England. It is called Ransome's Patent Silicious Stone, respecting the excellence of which for durability, cheapness, and the ease with which it can be moulded into any required design, Professors Ansted, Faraday, and Sir Henry De la Beche have given very high testimonials. It is prepared by an entirely new process, being to all intents and purposes a sandstone of excellent quality. The cost of sculpture is saved by the moulding of it to the required form in the process of its production. That it is cheap may be inferred by the fact that the fountain here engraved from one of Mr. Ransome's designs, is sold, exclusive of rock-work for about forty dollars, its entire height being five feet from the base. Some years ago Austin's Patent Stone was introduced by one of his workmen in our northern cities, but it did not stand the climate. We believe Ransome's is entirely a superior article, and hope to hear of its introduction.

Other materials are now employed for useful purposes in place of real, solid, costly stone, to which we can only call attention. There is a substance called Rangoon tar, and a pitch at Trinidad possessing remarkable properties. A pitch lake produces an article already much used as an Anti-oxide Paint, for the bottoms of ships, for metal pipes, roofs, &c., but its applications are many, defying as it does the sun and the waves. This melted pitch may be mixed with other materials, and light stones coated with it become as hard as granite; it is a good substance for repairing under-water foundations. It can be cast into water-pipes more durable than iron, and at less expense, and without risk of imparting any offensive taste to the water. This has been successfully done and Port Spain is supplied with water very economically with such pipes.

Rubble is now made economically in France with concrete, as it was by the Romans, not only for foundations but for large domes and arches. The cement works at Vassy now produce cement for this purpose to the amount of one hundred and fifty thousand dollars a year. The bridges at Paris have been repaired with it, two having been built entirely of it in a very short time. Mr. Rennie, the civil engineer has brought the subject prominently forward in England and has shown that concrete may be much more extensively used in engineering and other works than it is at present.

There is another article by which damp and water are set at defiance; it is called Water-Glass, or oil of Flint. It is a preservative against fire, a good glaze, stiffener, &c., a varnish for metal pipes, rendering them as



smooth and clean as glass. A Water-Glass Company has been formed in England to give full effect to the invention.

Wood also claims attention. Portable Swiss chalets are constructed by machinery, so as to be erected in any spot in three or four days. Capital things for folks who want a temporary residence, while trying whether a locality will suit them or not: they may now carry their house with them from place to place. A sportsman may have a picturesque shooting lodge set up for his sojourn, or an angler a fishing-lodge, or boat-house, fashioned to suit the landscape. And now that wood can be rendered all but imperishable and fire-proof, wooden chalets may be occupied with safety.

ENGLISH STRAWBERRIES *versus* NATIVES.

BY D. M. RICHARD, WASHINGTON, D. C.

IN the April number of the last volume, Mr. Saul in speaking upon strawberries, asserts that the foreign varieties succeed better in the vicinity of Washington City, than our American sorts.

That "Doctors will differ" is an old saying, and one that holds good in almost every profession. From my own observations I am compelled to differ with Mr. Saul, that the English varieties are superior or even equal to the leading American varieties, even in the "District of Columbia."

To make any fruit profitable for market there are several things requisite, fine flavor, good size and appearance, hardness, regular and good crops with the *least labor*, and the nearest we can have all these qualities combined in one fruit, the more profitable it is. Now how will strawberries compare with this standard.

For some years past the Alice Maud, has been grown more extensively for the Washington Market than any other variety, Hovey's Seedling excepted, and how does it compare with the "little scarlet;" it burns out in summer, freezes out in winter, the fruit is deficient in color and flavor and has nothing to recommend it but its size, and in very favorable seasons bearing a good crop of fruit. I have frequently seen them selling for twenty cents a quart, when Hovey's would be bringing fifty cents.

As for the Victoria and Kitley's Goliath, they may have done well in 1857. I saw them the last season a perfect failure, while Hovey's Seedling, Prince's Magnate, McAvoy's Superior, and several other American varieties aside of them were loaded with magnificent fruit.

Dr. J. H. Bayne, a horticulturist of high standing and perhaps the most extensive orchardist and strawberry grower in the neighborhood of Washington, has tried several hundred foreign varieties, and that too under the most favorable circumstances, and he has thrown them all away as worthless for our climate, not finding one that would compete with our best natives.

There is no doubt that with equal cultivation our leading American strawberries will throw every foreign variety far in the back ground as a profitable market fruit. Such has been the experience of Dr. Bayne, and if I am not mistaken, such is the opinion of Mr. Cammack, and nearly every strawberry grower in the neighborhood of Washington City.

A PLEASING SCENE.

BY A. W. D., MONTREAL, CANADA.

DID it strike you, Mr. Editor, when you were tracing so truthfully the pictures on the side of our beautiful mountain, what fine opportunities the declivities below some of our best houses presented for terraces and balustrades? There could be nothing made to the hand more attractive for the purpose. Pray insert the following ideal landscape, and let us see if some one of our wealthy men of taste will not attempt something like it. A flight of stone steps leading to a second terrace of double the width of the first, and laid out as an elaborate flower garden on a ground of turf, with fountains, statues, vases, and one or two highly wrought tables and seats



of elegant patterns, would be most effective. Descending the steps you would face the finest views of the St. Lawrence, the tubular bridge, the distant hills and mountains, and all the charms of landscape here displayed with such a lavish hand. "Ah! Bellagio! how well I remember thee!"

HORTICULTURAL COURTESY.

To one whose knowledge of human nature has been derived from intimacy with men in the crowded avenues of trade, the noisy political caucus, or the contaminating precincts of the bar-room, the country and rural pursuits seem eminently fitted to develop all the finer elements of man's nature.

Wearied with the city and all its evils, he procures a country home and devoting to its improvement all the appliances of a cultivated intellect, he sees growing around him his crops, his trees, and his garden, and in the intense enjoyment resulting from his pursuits, he feels his moral and religious nature, and his aesthetic qualities developing to a degree that is perfectly wonderful to himself. He thinks the result must be the same with others,

and with his own heart full of the warm feeling of good fellowship, he mingles with nurserymen, gardeners, and horticultural editors. Among them he finds some whose minds have been developed as his own, but among a large class he is startled and shocked to find jealousies, bickerings, bitter and insulting words, and a degree of ill nature that put to flight all his nice theories respecting the soul enlarging and elevating tendencies of Horticulture. His theory was a fair deduction from a sound philosophy, but unfortunately not sustained by fact.

These jealousies and bickerings of those who either sell or write about plants for a living, has destroyed many promising Horticultural Societies through the country, prevents the success of those in one of our largest cities, and would effectually destroy another were it not for the rich endowment which holds it together. I have been led to think of these things by an article in the November number of Hovey's Magazine upon Dwarf Pear culture, in which "whining" and other opprobrious and insulting epithets are applied directly to the editor of the *Horticulturist*, and indirectly to all whose expressions are adverse to Dwarf Pears.

The whole article is so abusive that I am unwilling to believe it to be from the pen of the Editor, but rather from some one who has no conception of such qualities as courtesy, good breeding, and gentlemanly language. The Editor owes it to himself as well as the Horticultural world to explain why such an article obtained admission to his columns.

Unless Horticultural Magazines will steadily avoid all personalities, the Editors may rest assured that no man who has any self respect will write for or read them.

Editors may respond that they do not care for this, but they have no right to deprive the horticultural public of the opinions of experienced men.

What is the whole history of this Dwarf Pear controversy ?

Some nurserymen and amateurs about Boston were successful in growing Dwarf Pears in their gardens, under high culture. A nurseryman on Long Island, charmed with the results he saw at Boston, planted ten years ago an orchard of four acres of Dwarf Pears. He ploughed deep, manured highly (about \$100 of stable manure to the acre), selected trees of the best quality of the five best sorts recommended by the President of the Massachusetts Horticultural Society, and gave them throughout full garden culture. The first two or three years were highly encouraging. The trees grew so luxuriantly, and bore so abundantly that he considered the question settled, and wrote an article for the *Horticulturist*, accompanied by an array of figures to prove that orchards of Dwarf Pears were profitable beyond all previous calculation.

This article was widely copied and inserted in a book on Fruits prepared by a well known Nurseryman at the West, whose sales of Dwarf Pears were doubtless largely increased by it, for people will be taken by figures, however deceptive they may sometimes be. A year or two subsequent to this, however, the writer's orchard began to flag. Being rather a pet, it was cared for in every possible way, fed, nursed, trimmed, and trained, but all was of no avail, and the writer after ten years was forced to admit that he was mistaken, and to feel that in common honesty he was bound to tell it to the public, although a part of his business was to sell dwarf pears. He did tell it. He was preceded and followed by others who told the same story. Men from Pennsylvania, New York, and elsewhere, who had ex-

pended large sums upon Dwarf Pear culture, and *who had no possible interest in giving a false impression.*

One would think that these gentlemen had a perfect right thus to express their opinion, and that in this expression they were entitled to common courtesy. Reasonable men would readily understand that Dwarf Pears might succeed about Boston if they would not succeed any where else, that they might succeed in a garden, while they would fail with orchard culture. But our Massachusetts friends were not willing to hear a word against their favorite dwarf, and were as much surprised that New Yorkers and Pennsylvanians could not grow Dwarf Pears, as the Feejee Islanders would be that they could not grow Bread fruit.

They said it was owing to poor culture, while some of them at least knew that an amateur near Hempstead, Long Island, of large wealth and quicker intelligence, had experimented as largely with all the varieties, and cultivated as highly as any fruit grower in Massachusetts, and for a long series of years, and is now compelled to give up Dwarf Pears as unsatisfactory.

If these Massachusetts gentlemen should simply say, "it may be that the climate and soil of other localities does not suit Dwarf Pears, but we know that *we* can grow them profitably," it would be all very fair, but when their best pomologists stigmatize all expressions adverse to their favorite as attempts to "*write down*" Dwarf Pears, then their position becomes offensive and discourteous. They must see that if fair expressions of opinion are so characterized, it will soon be difficult to elicit any horticultural information from those best qualified to give it. It was evident to thinking men at the late Pomological Convention, that this spirit of intolerance was increasing, and unless checked would destroy the usefulness of that organization.

The whole tone of this Pear controversy has been unfortunate. We once indulged the hope that the courtesies and amenities recognized among gentlemen, would generally prevail among all interested in Horticulture. The article which has furnished our text, does not give us much encouragement.

We hope, however, that such may not be frequent, and that every cultivator of trees and plants will always remember that in the mysterious processes of nature, success is not always the test of truth; that while climate and soil differ, there will ever be different results, and that no man or community of men can justly claim all knowledge or all experience, or announce to the world that wisdom dies with *them*.—S. B. P., *Flushing, L. I.*

GRAPES.

MR. EDITOR: Mr. John Fiske Allen, in your November number page 516, writing about grapes, remarks: "I have never been able fully to satisfy myself that there really was any permanent difference between the White Nice and Royal Muscadine." It is quite certain the grape cultivated under the name of Nice by Mr. Allen, is not the same as grown under that name in England.

Turning to Mr. Rivers' Catalogue (an excellent authority) I find it described thus: "Berries round; medium size; greenish white; sweet

and agreeable ; not rich ; bunch very large, often weighing several pounds." This agrees with Thompson in his description of the variety cultivated at Chiswick.

The Horticultural Society, at great labor and expense cultivated fruits from all available places, fruited and corrected the nomenclature, and we may safely suppose they are as near correct as possible.

More than twenty years since I have seen this variety cultivated, and in great perfection. It agreed in all particulars with the description of Mr. T. Rivers. An average bunch of this grape is fully six times as large as an average bunch of the Royal Muscadine. In fact, it has the largest bunch of any grape I have ever seen ; not excepting Syrian, Muscats, Damascus, Palestine and others. The berries are small for a bunch of such a size—not larger than a Royal Muscadine. When fully ripe they are scarcely of as deep an amber color, and are greatly inferior to it in flavor. Indeed, it is considered in this latter quality as very poor. It has very large shoulders. In England it is very little cultivated, as it has nothing to recommend it but size of bunch.

Royal Muscadine is universally cultivated by grape growers in England, and under its other name Chasselas de Fontainbleau, in France ; and is considered the same grape by Thompson, who had opportunities of growing plants and fruiting from various sources, and in this the leading grape growers in England agree with him.—JOHN SAUL, *Washington, D. C.*

GOLD AND SILVER FISH.

BY B. TAYLOR.

As an ornament in gardens or pleasure-grounds, a fountain and basin, or small piece of water, stocked with gold and silver fish, is generally admired, and justly so, especially when we consider the exotic appearance and great beauty of these species of the finny tribes. I seldom see them disporting in their own translucent element without considering their "culture" an index of refinement and taste. Although, perhaps, not directly connected with the pursuits of gardening or flowers, yet there being now so many persons who keep them in the house, along with favorite plants, ferns, etc., or in their grounds, and as their management is but imperfectly understood by many, a few words on this head may not be out of place in your widely-read work.

These beautiful kinds of fish are varieties of a kind of carp (*Cyprinus auratus*), natives of China. There are indeed so many different kinds belonging to this species, that M. de Sauvigny published a work (*Paris*, 1780), in which he gave colored representations of eighty-nine varieties, of every different shade of gold, silver, orange, brown, and purple. They vary also in their tails, which are sometimes double, and sometimes triple ; and in their fins, which are much longer and larger in some varieties than in others. The gold fish was first brought from China to the Cape of Good Hope by the Dutch, about 1611 ; and a few specimens were soon after purchased at an enormous price by the Portuguese, who appear to have first brought it to Europe. The Dutch continued for some time to sell their fish at exorbitant prices ; but, breeding rapidly in Portugal, the Dutch soon lost

their monopoly, and the Portuguese for many years supplied gold and silver fish to the rest of Europe. In France, the first seen are said to have been sent as a present to Mademoiselle de Pompadour, about 1730; when the French courtiers were so enchanted with the splendor of this new kind of fish, that they called it *La Dorade de la Chine*, a name it still retains throughout France. The French have, however, now so completely naturalized this fish in the Mauritius, that it is served at table with the other kinds of carp, which it greatly resembles in taste, though it has a more delicate flavor.

Though the gold fish is a native of a very hot part of China, and though it appears to enjoy the heat of a pine stove or orchideous house with us, yet it possesses the power of resisting a great degree of cold. Some years since Professor Host, a well-known naturalist in Vienna, chanced to leave a glass globe containing a gold fish in the window of a room without a fire, during one of the coldest nights of a very severe winter. In the morning he recollected his poor fish, and examining the glass, he found the water frozen apparently quite hard, and the fish fixed immovably in the centre. Supposing the fish to be dead, he left it in the ice; but, as it was extremely beautiful, he took a friend to look at it in the course of the day, when, to his great surprise, he found that the water had thawed naturally, from the room becoming warm by the sun, and that the fish was quite lively, and swimming about as though nothing had happened. The friend of M. Host was so much struck with this remarkable occurrence, that he tried a similar experiment; but bringing his frozen fish to the stove to hasten its revival, the fish died.

Gold fish live a very long time. A few years since there were some in a large marble basin belonging to the Alcazar of Seville, which were known to have been there more than sixty years, and which are probably still existing, as they then showed no signs of old age. They were indeed particularly active, though larger than usual, and of the most vivid colors. It was, however, remarkable that they were all of nearly the same size; and this is generally the case with all gold fish kept in clear water, as they never breed in such situations. It has also been remarked, that gold fish kept in glass seldom increase in size, particularly if the vase or globe in which they are kept be small. A curious experiment to ascertain the truth of this remark was tried some years ago in Paris. Two or three fishes a year old, which measured two inches long, were put into a glass globe exactly one foot in diameter. The water was changed every second day in summer, and every week in winter, as is usually done with gold fish kept in glass vessels, and they were occasionally fed with crumbs of bread; but in eleven years they had not increased one line in length. They were then taken out of the globe, and thrown into a pond in the garden, where there were no other gold fish; and when this pond was drained at the end of ten months, the gold fish were found to have increased in length, one about four inches, and the other nearly five. It has been before remarked, that gold fish never breed in clear water; and it has been observed that when they do breed, the young conceal themselves among the roots of plants, in inequalities of banks, or among the faggots which may have been put in for them. A lady who happened to pull up an aquatic plant which had grown on the bank of a pond in which there were some gold fish, was quite astonished to find the roots appear alive; and on examining them, she dis-

covered the movement to be occasioned by a great number of little dark-brown fishes which were sticking to the roots. These little fishes were the fry of the gold carp, which are taught by instinct to conceal themselves from the old fish till the golden hue begins to appear on their sides, which it does when they are about an inch long. It is said that the gold carp devour the fry of other fish, and also their own, if they see them before the golden blotches appear.

When it is wished to breed gold fish in clear water in a tank or basin, a few faggots should be thrown into the water; or a sloping bank of gravel should be raised in the tank, the upper part of which is near the surface of the water. This will afford at once a situation for the old fish to deposit their spawn, and a shelter for the young fry. Some persons, when the spawn has been deposited on a faggot, remove the wood to another tank to rear the young; but they always do better, and grow faster, when bred in a pond with an earthy bottom, and in which plants grow naturally.

In keeping gold fish in ponds, no care is requisite but that of sprinkling a few crumbs of bread occasionally on the surface of the water to feed them; but when they are kept in any small vessel, the water should be changed regularly, not only for the sake of cleanliness, but because the fish will have exhausted the water of the animalculæ, which serve them as food. The usual rule is to change the water in glass globes or vases every second day in summer, and every week in winter; oftener if possible.

These little pets are now distributed through the Union more or less, but by a very little care they might ornament every lake and mill pond. To transport a pair of gold fish, procure an old Portugal grape jar, and tie a bladder over the mouth pierced for the admission of air; by this means they may be sent from one end of the Union to the other if the top is kept up; any simple contrivance will answer.

Many years ago the pond which contained a large family of gold fish, in Pratt's Garden, Philadelphia, gave way and the little pets were all emptied into the Fair-mount dam of the Schuylkill river, where thousands are now safely at home. They do not take a bait, and are consequently safe from the anglers. Why should not *all* pieces of water be thus populated. In the clear waters of some of our greater lakes they would be highly ornamental, as indeed they are wherever seen.

THE PAST SEASON.

Mr. Editor.—The past, has been a season of unusual scarcity of fruit in this section, and indeed seems to verify the assertion that raising fruit seems to be attended with a great deal of uncertainty.

Grapes were the only crop of Autumn fruit in this whole region, with the exception of a few Peaches, Pears, and Apples. One orchard alone containing a number of trees of the Kearosee, and White Apple of which I sent you a few last season (now called White Winesap). These trees had a pretty good crop (I have not known them to fail twice in fourteen years).

Can we not select such varieties as can be relied upon at all times? I have no trees to sell of these varieties, and therefore am not interested in bringing them out, but think there may be plenty of other good varieties that will bear in almost any season, if we could get hold of them.

Why is Horticulture not one of the branches taught in our Colleges, Academies, and Common Schools? Then men would begin at the right place when undertaking to raise fruit, and not spend a fortune and years of time in learning by sad experience, what they should have known before they commenced.

Depend upon it, a lecture once a month to the students of institutions of learning in the country, on the subject of practical Horticulture, would in a few years show a change in this important, useful and interesting branch of industry.

The time has come, when we may no longer plant a tree, and say live, grow, and bear fruit abundantly, as of old; there are other things to be taken into account.

The land is not new as it once was; all the insects of the forests (now cut away) have taken up their abode in our orchards. Bugs, beetles, borers, curculios, aphids, &c., in hosts.

Clear away the grass and weeds around the trunks in the fall to prevent mice from barking, scrape off all moss in the spring, wash the trunks with strong soapsuds, look out for borers, and cut out, if any are found.

Prune every year to avoid cutting large limbs; keep up bonfires on calm nights in June, and destroy millions of mischievous insects; when your trees overbear, knock one half the fruit down when half grown, and you do much towards securing a crop the following year. Let no sods grow in your orchards, raise no wheat, rye, oats, or barley, in your orchards; beans, potatoes, and corn, will be much better; and for every good crop of Apples or Peaches, give a good top dressing of ashes and manure. Smoke your Plum trees three times a week with burning leather and mouldy hay, from the time the blossom has left until the fruit is nearly grown.

Cut the worms out of the Peach trees, level the earth again, and put a small circle of rock salt around them, or an old piece of strap iron, the rustier the better; open at one side so as to yield with the growth of the tree, this will be a remedy for one year at least.

Some one, and perhaps many, will say, all this is too much trouble, but it will pay. It has come to be the fact that the price of fruit, (like liberty,) is eternal vigilance.

Should life be spared me, and next season be a fruit one, we will report on this same subject.

Yours truly, THE SPY.

Lebanon County, Pennsylvania, Nov. 18th, 1858.

CALIFORNIA FRUITS.

A CORRESPONDENT of a daily paper gives the following interesting account of California fruits:

The annual fairs of the Mechanics' Institute and the Horticultural Society, united, are now open at San Francisco. What we have written of the fairs at Marysville may suffice as a general description of this, except that here is no exhibition of cattle, and no racecourse. It is not an agricultural fair. The display of fruits is much larger, because this is the great central depot for the State. In no Eastern State can an exhibition be got up of fruits of so vast variety, and of specimens of such perfection,

as to show not a blemish. In no country is there such difficulty in awarding premiums, because the general excellence is such that it is only shades of difference which determine the awards of merit. We shall not go through a list of varieties, because you can scarcely name one that is not represented; but we may give some peculiarities that will interest every horticulturist. We were in a position that gave us the means of exact information. The apples are from trees seldom exceeding five years old from the graft. Whether in fineness of texture, or in fine flavor, California apples fully equal those of Oregon, and we cannot find much if any difference in comparing the general run with the apples of Eastern States. There is one peculiarity of importance, viz: about two thirds of your winter apples become autumnal fruit here, occasioned by the uniformity of the temperature and other climatic causes. This is against the profitable account. By reason of this, in selecting the best winter apple for the premium, a score of undoubtedly fine so-called winter varieties had to be rejected as autumn apples, and the Northern Spy was decided to best combine, with other desirable qualities, that of keeping for spring use. The Early Pearmain took the prize as the best summer apple. But as the season is over for summer varieties, the best is probably not on exhibition. The Gravenstein is the fall apple pronounced the best. We hope to send you pastel drawings of these, colored to life. Size is not a material element before the judges, but longevity and general qualities. It is found that different varieties of apples are adapted to different soils and exposures. What does well in Napa, may not do at all at Petaluma, for instance; and this remark applies to other fruits. We attended the convention of fruit-growers, where, in the usual practical way of getting at things here, each variety of every species of fruit was culled, and growers were interrogated as to their experience. Everybody in California talks with ease and to the point, and everything that is known is thus elicited. You would be surprised at the intelligence and ready wit that sparkle at such conventions here, tempered with all courtesy and good humor. There is a keen relish for a little bit of fun, and persons who come here to speak, should cultivate that branch of eloquence.

Pears are in large display. This is especially the home of the pear, the plum and the grape. These fruits have no enemy in California. The old mission trees of half a century, and the vines of nearly equal age, hang now as full as at first, without a speck to denote deterioration. The Bartlett takes the premium, but there are plenty of nearly equal excellence. The flavor of the pear here is superior to that of the States. The plum here is less acid and more flavory. Of the peach opinions differ. We should say, as of the strawberry, it is scarcely so well flavored as in the East. But, in all other respects, these two fruits are very fine. The peach does not make profitable production in what is called the Bay country; that is, wherever exposed to the unceasing winds that sweep the country for some thirty miles east of San Francisco; and grapes may be included. These last are also injured by the summer fogs peculiar to the coast. The best section for peach and grape is undoubtedly around Sacramento; and thence, over a vast extent of country east towards the mountains, and south to Lower California. Los Angeles has long been celebrated for grapes, and it is, perhaps, the most profitable section for their culture. Nectarines are abundant; but, this fine fruit comes with the peach, and the retail market has

not made an adequate opening for it. Apricots are early, and find quick sale. Prunes are on exhibition, dried in the air. These show how well adapted is this climate for drying fruits to export. They can be cured in the open air, and out of the too drying rays of the sun. There is no danger of injury from rains or dews while being cured, and for these reasons California dried fruits will take the first rank in the market of the world. The pomegranate, though exhibited, is a rare fruit. The climate is exactly suited to its growth, but, like the orange, the almond and olive, cultivators have not seen any prospect of a profitable market for it. The almond is the fruit-stone of a certain kind of peach whose fleshy part is not palatable. At this time the loaded trees exhibit a curious appearance, the almond peach being bursted, and showing the almond stone within the cleft, clean and ready for market the moment it falls out. The California white walnut is superior to the European in one respect; it leaves upon the palate no bitterness after eating it. The tree grows wild along the Sacramento. The Lawton blackberry has found its way here, but the exhibition proves that it is equalled by two varieties natives to this country. It is hard to beat. There are very few quinces at the fair; but these are fine and free from any blemishes. We see everywhere plants of trees, but scarcely any of this fine preserving fruit. It may be that this season has been unfavorable. From this display one must set down California as a country in which fruit must ever hereafter be plenty. It is now, and it has been, the most healthy country on the globe, when fruit was not to be had, and the accession of this wholesome element to the diet of the people, gives earnest that the general sanitary condition will be sustained and improved.

San Francisco, Sept. 18, 1858.

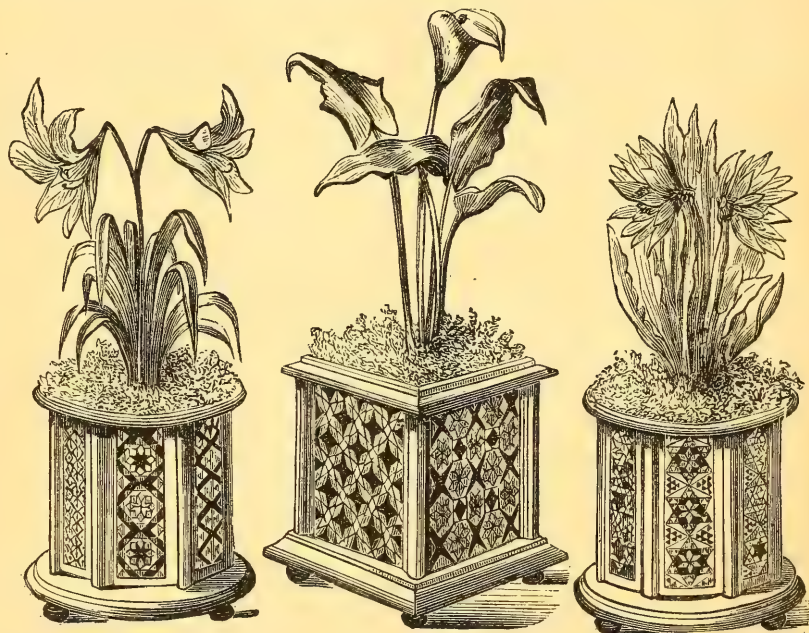
ON THE VALUE OF LIQUID MANURE.

BY F., *Gardener.*

NOTWITHSTANDING the repeated recommendations of practical men in favor of liquid manure, but little attention is paid to the subject. If it be of the vast importance which it is said to be, why is it so little used? Why does not every garden contain its tank, in connection with the manure heap? To make such an arrangement, to provide a receptacle to retain the juices of the decaying weeds in the rubbish heap, can neither be difficult nor expensive; and if it be practicable and easy of accomplishment to provide for the latter, the same arrangement would be suitable for the manure heap. A common tub or cask of any kind will answer the purpose, and if it is leaky of itself, it may be rendered water-tight by puddling round the outside. It is supposed, of course, to be placed with its upper end level with the ground, or as much under the surface as will ensure drainage running into it. I have applied it in various ways, and in every instance with results which have proved its value. On my flower beds I have used it freely during winter, and especially in frosty weather, when snow was on the ground. I have several tanks, but they are all connected with each other. In one of these I have fixed a large wooden pump, through which the liquid is drawn and carried to the flower beds and borders, as time permits.

THE NEW GLASS MOSAIC JARDINIERE.

WE had occasion to refer to Mr. Ransome's improvements in artificial stone-work for vases, edgings, and statuary. We here call attention to a new style of decoration in connection with plant culture, namely, to Mr. Stevens' new Glass Mosaic Flower Pots, as most elegant ornaments for the reception of plants in the drawing-room. The glass mosaic is introduced in panels of pure white polished cement, and the "pots" are made after various beautiful forms, the mosaic being of many elegant patterns, which



we can only compare to the endless forms seen in the kaleidoscope. The pots are lined with sheet zinc, either to hold another pot, or soil for plants, or to contain water, as a vase for the reception of cut flowers. They are, in fact, the most beautiful things of the kind that we ever saw, and, when more generally known, will win universal admiration. On a stand, as a window ornament, there can be no more attractive object. Mr. Stevens is deserving of great commendation for such a happy idea as the application of glass mosaic-work, remarkable for its rich and costly appearance, to the embellishment of flower pots. We would recommend our lady amateurs to inspect the stock at the manufacturer's premises, No. 56 Great Queen Street, Lincoln's Inn, being assured they will not fail to be delighted with so elegant an article for the reception of their drawing-room pets.—*London Florist.*

A FEW REMARKS ON GOOD CULTURE.

BY WILLIAM CHORLTON.

NOTWITHSTANDING the oft reiterated assertion amongst our modern progressive cultivators that our present experience is far a-head of our forefathers, I am led to think, sometimes, when ruminating over the records of excellent quality, abundance, productiveness, and certain results of much of the direct, simple, and observant practice of former days, that we take more upon ourselves than we are justified in doing. True, the development of science has done a great deal for us, and we have accepted to a great extent the benefit of it. As a general thing we can explain more eloquently the why and wherefore of vegetable existence and intricate organism. We can analyse and show the chemical components of soil, and draw inferences therefrom which look very plausible, and in some measure assist our investigations, although they may often be found unreliable. In the aggregate, also, we, perhaps, know more, and succeed with a greater certainty; but do we not often claim too much, and, really, in the same meaning, rest our boasted superiority upon pretension, or the hasty gallop of enthusiastic zeal? Are not the truly improving, the observing, reasoning, practically demonstrative, and more positive followers in the race, tripped up and left behind in public estimation? However this may be, we have not yet arrived at a knowledge of the best general cultivation sufficiently to make it "familiar as household words." No; rather, such are but exceptions to the rule; science, hitherto, has, in too many cases, only produced, mentally, a metaphysical effect, and has led off some of its votaries into extremes, both chemically and physiologically; the consequence of which, is much pedantic palaver without originality, and a great flourish of unproved advice. In speaking thus I would not in the least insinuate against the sterling merit of those of our co-workers who have the common sense, and ability to advise, and practice in the right track.

If we take cultivation as it most commonly exists in the broadest sense, we have to accept the tearing up, pulverizing, and draining of land, the admixture of certain manures when it is found to be deficient of such, the sowing or planting of different crops, keeping down and destruction of weeds, loosening and stirring the soil during growth, and harvesting the various individualities according to their kind. There may be also added, as a speciality, the pruning and training of branches in fruit trees, transplanting while in the nursery rows to obtain an abundance of fibrous roots, care of the roots during removal, and several other small details. All these practical operations were known and successfully acted upon before the Chemist, or the mere Theorist ever thought of introducing science to assist in the cultivation of the earth; and the advocacy of these helpmates has not been conducive of so much benefit as is sometimes asserted, from the fact of their being, too often, thrust upon the simply practical observant mind in a dogmatic, and to him, proofless manner. If some of our Agricultural editors would weigh this subject well, it is more than probable, they would keep out of their periodicals some of the nonsense which is often printed, and find room for more reliable advice. Better, far better, if short of matter, to copy judiciously selected extracts, that may be depended upon, from the standard works of competent authors. But to the point,

If we would succeed to the best of our wishes, it is necessary, not only, to possess the practical routine, but include as much scientific truth as may be useful for our purpose. A small portion of the latter is sufficient to give us to understand, that the roots, leaves, branches, and trunks of a tree must, comparatively, correspond with each other in the absorption, ready conveyance, assimilation, and decomposition of the different elements, which unite into the varying and modifying compounds, and also, that there must be present, in the soil and atmosphere, all that is requisite as food, and for respiration, and further, that under contingently occurring circumstances, it becomes necessary to perform peculiar operations, supply more abundantly, or withhold, certain proportions of the general requirements. With regard to the latter of these points, practical experience teaches us, that a good friable and rich soil, in other words, a due combination of clay and sand, largely incorporated with vegetable matter and neutralized ammoniacal salts, is one of the most permanently fertile; and that we can greatly increase the growth of most plants, if healthy, by adding an abundance of the last two in a liquid, or even solid state, during the period of activity; while injury would be done to the same while at rest. On the other hand, science shows us when we have a subject that is over vigorous, and consequently unfruitful, the application of further stimulant would only increase the evil, that it may be possible the roots are drawing too much crude fluids from a want of proper aeration of the soil and deficient drainage; in consequence of which, the right proportions of nutriment for forming concentrated solidity, in connection with free exposure to the light, are not obtained; the result being, only an exuberance of uncentralized development devoid of the fruit producing properties. Science further informs us, that it is not the extent to which the roots may elongate, or penetrate, nor yet the extreme length or volume of the recently formed branches, that healthy longevity, or present and future fruitfulness is gained, but the so increasing the number of months or spongioles of the one, with plenty of proper food in the vicinity as to produce robustness without much extension of the other, and in addition maintaining a proper atmosphere for the leaves to perform their functions. Consequently it is advisable, every two or three years, to dig a trench, some two feet deep, around each tree, distant according to size, and immediately fill in again, adding, at the same time, a portion of well rotted barn yard manure, or vegetable mould, in which is decomposed a portion of guano. This procedure will cut off the extreme ends of the roots disposed to ramble, and force them to throw out a great increase of others, which will make up for the deficiency and enable them to feed near at home, without the necessity of having to travel to a distance for, perhaps, a less amount of the right nourishment that will form fruit producing compounds. We have a proof of this reasoning in the Pear on Quince roots. The quince, unlike the pear, does not extend its roots to a great distance, naturally, but is provided with an immense number of them, so much so, that a tree may often be drawn out of the ground like a matt, plainly showing in this instance, that whatever fertilizer is used it ought to be applied in their immediate vicinity, and leading us to infer, that the earth in which it is located should be rich and deep, which will enable the growth to progress to maturity, and prevent sudden checks by drought or otherwise. That such is the case has become a demonstrated fact, and if the same principle were to be more generally carried out, there would be little cause to com-

plain of the want of success, providing the ground be not overstocked with other vegetable growth.

Now this example may be taken as a stand point in the culture of all fruit trees, or indeed plants of any kind, and I would again repeat, for the subject bears arguing, we can obtain better quality, more certain productiveness, and permanency, by increasing the number of small rootlets, and supplying enough food "near at home," than by forcing the natural adaptability of the plant to travel over a great space in search of the proper elements wherewith to sustain its own existence. It luckily happens that we have a few thorough-going men, who eschewing almost universal prejudice, have stepped out of the common course, and observed for themselves; men who have joined together the aforesaid practical experience and scientific theory, and have proved; against all opposition, that the above is the only correct principle of cultivation, and will realize the most profit. As proof of this, we have only to read over the works of such authors as Mr. Rivers of Sawbridgeworth, England, and other prominently known good men who practice what they preach, when we shall find sufficient to warrant a trial of what they have accomplished as fact. There is no doubt but many hangers back will consider such recommendation as requiring unremitted attention, and as expensive; admitted; all things Agricultural and Horticultural do so if we desire to obtain after profit and gratification. It is man's curse, "Thou shalt eat thy bread by the sweat of thy brow," and we must no more think of escaping the injunction than Adam of old. Providing such is the case, what then? Is it not far better to be realizing, permanently, a large percentage upon invested capital, and eating the produce of our labors in greater excellence, than grunting about empty pockets, and indigestible inferiority? Good culture is always the cheapest in the finale, although it may require more outlay at the beginning, and if we can still further improve by uniting the desiderata, Practice and Theory, it becomes absolutely ridiculous to work in any other way. Depend upon it, if we are anything ahead of our forefathers it is in this particular, for I doubt very much if we are not somewhat behind them in the simply practical, at least, when we look at the many old and neglected orchards, with moss-covered trunks and branches, which were once vigorous and clean, and yielded luscious fruit, standing despondingly amid hard grass turf, the under base of which has long since had drawn out of it all the elements of nourishment, inviting us to assist them by culture and the help of manure, by which they would again repay bountifully. And again, then see some ignoramus making holes in a similar situation about large enough to bury a cat in, thrusting therein vigorous young trees, the ends of the roots turned up at the sides for want of its being larger, and those sides hard as a baked brick, we are reminded of the truth of such a supposition. Be assured, if we are to succeed, keep our fruits from wearing out, and with their sweets in perfection, we must drain well, trench deep, plant carefully, and, if the soil is not already well supplied with the needful, add it; and, afterwards, continue this needful care, both solid, and liquid as may be necessary, and without the interference of the grass or any other crop. Let us have our fruit trees cared for as well as the gardener does a cauliflower when he wants it for exhibition, and secure concentration of the fluids in the roots and branches properly; let them be, with this, equally proportioned, and we shall not have to mourn over so many unsuccessful, recent examples,

nor hear so many statements about such and such fruits being worn out, or proving a failure.

FLORICULTURE AS A SCIENCE.

BY G. GLENNY, AUTHOR OF "THE PROPERTIES OF FLOWERS."

This embraces, first, the cultivation of flowers in the highest degree of perfection ; secondly, the improvement of the races. The former is practised successfully by thousands, the latter is becoming more general. But, until the nineteenth century, there was not much progress made, although many attempted it. The advancement thus made was confined to very few subjects, and was accomplished chiefly by the humble classes. For many years before the late start, in 1832, there was no well defined object to attain in any single flower. Writers on the subject pretended to tell us the criterion, as it was called, of a good "this," "that," or the other, but not one of them advanced a hair's breadth beyond an imitation of what we already possessed. They knew what particular variety was considered a good one, and they made that the "criterion." Of course, as there was nothing to try for, nothing to aim at, but to produce new ones as good, nothing beyond it was achieved. But, in 1832, we ventured to publish a series of imaginary qualities, which we knew would be appreciated by the public, if they could be accomplished ; and we also knew that the nearer the approach to our model that a flower could be produced, the better would it be pronounced by all who had the least taste. When we insisted that the Cineraria, the Pansy, the Verbena, the Geranium, the Phlox, and others, should be positively circular in the outline, and free from indentations, we had to bear the sneers of people who could see a yard a-head ; and scores, who called themselves florists, pronounced all these changes to be impossible, and therefore, our notions ridiculous. But no sooner did the raisers of novelties know what to try for, than they selected a very different style of flower to seed from. Those which had widened their petals, and thereby lessened the gaps where they divided, however ugly and unpromising the color, were preferred, to seed from for future novelties, and we need not point out that nearly all the "impossibilities" have been accomplished ; that is to say, the open star of the Cineraria has disappeared, and they are produced circular ; the Phlox is perfect, though at one time it was the form of a five-sailed windmill ; the narrow petals of the Verbena have widened, and it is rapidly progressing ; the Geranium has wonderfully advanced towards perfection ; and every flower for which we set a model has been vastly improved. Of course there was no more sneering at our "impossibilities. The Fuchsia, which, in all our recollections, was a graceful drooping flower, with the sepals hanging close and almost hiding the beautiful corolla, was not to our taste. The inside of the sepals is always brighter than the outside, and we laid down the law, that the sepals should reflex, like a Martigan Lily, showing the whole of the velvet corolla and the inside surface, instead of the outside of what was once its covering. Of course this was, in some people's eyes, another impossibility,—"it was unnatural," it was "turning the flower wrong side out, and the sepals upside down." The public, however, had faith in what we said a flower should be. There were

raisers who seeded from varieties that showed the most inclination to reflex, and look at the flower now ! The improvement has been so palpable, that the veriest tyro would instantly give the preference to the reflexed petal. The Dahlia was a weed. One nurseryman cultivated and collected all the monstrous flowers that were oddly formed. There were "Anemone-flowered," "Ranunculus-flowered," "China Aster-flowered," "Globe-flowered," and as public curiosity and public taste struggled for the mastery, we thought it high time to banish such rubbish, at least from the show tables. We set forth the qualities a Dahlia ought to possess. We succeeded in directing public taste to a proper channel, and totally destroying the sale of all the bastard nondescripts. The Tulip was little valued for its form and purity, and the most foul and illshaped varieties disgraced many of even the best beds, and constantly took prizes. All the criterion that was held up for a good Tulip failed in giving the smallest idea of the form it ought to assume. One told us it should be the form of a cup, but which of the hundred-shaped cups that were made for ornament or use the raiser was to take for his model, nobody thought of telling him. Another said the stem was to be a particular height, when the youngest grower knew that there ought to be three, if not four different lengths. When, therefore, we settled the question, by saying the form should be half a hollow ball, and, when fully opened, a third of a hollow ball, the only snarling we heard was one scientific noodle in the country showing, by some twattling argument about the physiology of the flower, that our proposed form was neither possible nor proper ; whereas, we pay no more respect to the physiology of the Tulip than we did to the star of the Cineraria, or the heart-shaped top and butterfly wings of the Pansy, when we were told that the proper form was indicated by the name, *Heartsease*. Now, the very best growers of the Tulip value its near approach in form to from half to a third of a hollow ball as one of its noblest features, although we have not many that come near it. In short, there is no denying that the publication of our *Properties of Flowers* improved the taste, and settled some very unprofitable squabbling amongst florists, and that the work is looked up to as an authority. The summary amounts to this : That our *Properties of Flowers and Plants* were opposed until they became authority, and then copied and republished as if the thieves had been the authors. The science of floriculture has, however, progressed, ever since the *Properties* were made public.

There is no good reason why a man with only a rod of ground should not industriously take up one subject, and raise some every year, throwing away all that are not new, or better than the old of the like character, and saving seed from such as exhibit some good points. There is great room for a change in the Pink, Pansy, Verbena, Patunia, Dahlia, Polyanthus, Auricula, Carnation, Picotee, in short, in almost every flower, and the proper way to commence, is to get a pinch of the best seed he can command, that he may have a chance, though perhaps a poor one, the first season ; but to buy one plant each of the few most striking varieties of what he is going to raise, and save for himself the next, he will have this great advantage the second year, he will start fair with the very best growers, because he will have their best to begin with, whereas they have been persevering for years to get where they are. But nobody can expect that the best growers will part with their best seeds, to start others. They must seek among brother gardeners and amateurs ; and in saving seed themselves, they must not be

content with marking the best, for if they let the worst open their flowers, the best will be spoiled. The best way is to destroy the others as fast as they come out, or remove the best, and plant them under glass, right away from the mass. The whole art and science of floriculture consists in saving seeds from those which are nearest what you want; and if there be any desire to cross one flower with another, remove the anthers from both, and apply the pollen of each to the other; but if a few of the best are placed together, away from all others, there will be little doubt of their crossing in every way, by the mere action of the insects. If all the amateur raisers would unite, there would be plenty of customers among themselves to pay a raiser well for a good thing; for, we are sorry to say, unless a flower that deserves it, is brought prominently before the public by an authority to be relied on, the raiser of a good flower has but little encouragement among the dealers.

We hope to hear of many novelties, even next year; for *Petunias*, *Verbenas*, *Antirrhinums*, *Pansies*, *Hollyhocks*, and some other perennials, if raised under glass and planted out in May, properly hardened, will not fail to bloom, and we all know that *Dahlias* perfect themselves the first season.
— *Midland Florist*.

A GROUP OF VAN MONS PEARS.*

THEODORE VAN MONS, BEURRE KENNES AND CONSELLIER RANWEZ.

Theodore Van Mons.—Named by Van Mons I believe towards 1825 after one of his sons.

Free, handsome, pyramidal, good grower and bearer; admirably suited to the quince stock, where its fruit is more luscious than upon the standard. Fruit medium, ovate, sometimes pyriform truncated, with a long stem and a green smooth skin, turning yellow towards maturity. Flesh buttery, juicy, well flavored and sweet enough; but a little uncertain. In good seasons, very best; in wet or unfavorable seasons a second rate pear. Ripens well and slowly throughout September, often to the middle of October, must be picked before the color of the skin indicates its approaching maturity.

Beurré Kennes.—Fruit medium, pyriform, of a dark hue, brown reddish with numerous dots, and a rather rough skin; a very conspicuous fruit in the garden. Quality good to very good; flesh half buttery, with a fine aroma, a little gritty at the core; but keeping well for its season, (end of September to middle of October); stem medium, sometimes fleshy and inclined obliquely. Calyx irregular with few or no segments. It was obtained by Alexander Bivort from the seedlings of Van Mons, and fruited in his grounds for the first time in 1845. The tree is a good grower and of a pyramidal shape. Succeeds upon the quince, but better upon the pear stock.

Consellier Ranwez.—Obtained and dedicated to his friend Consellier Ranwez, by Van Mons, towards 1830.

* See Frontispiece.

The tree is one of our most vigorous growers, a first-rate bearer, and seems to succeed in all soils fitted for pear trees.

As a market fruit, large and of good quality, we think we can safely recommend it; the tree yields abundant and almost sure crops, being hardy and sound. Fruit obovate pyriform, large; with a long stem, and a green skin, which changes little towards maturity. Flesh juicy, melting a little, coarse but pleasant.

It is better suited to the pear than to the quince stock. Ripe in Boston and New York state from the end of September to the beginning of October.

L. E. BERCKMANS.

LARGE TREES.

BY S. B. BUCKLEY.



It is curious that the large trees of the United States east of the Mississippi river, and especially the size to which the different species attain have received little attention since the time of Michaux. I have been collecting information on the size of trees and measured many during the last few months, and intend to publish through the *Horticulturist* a few notes on the subject, in hopes that others will also measure them and note their relative size. It would be useful also to know the ordinary age of each species of tree. They are the oldest living things on our globe, serving as links binding us to the past and connecting us with the future. I

love to gaze on a very large tree; it excites reverential feelings. It has lived before Columbus discovered the New World, it has afforded shelter to the Indian, a refuge to the weaker animals, and a resting place for birds ages ago. Aye, it may have lived when the mastodon roamed through the old forests. Through many summers and winters it has survived the companions of its youthful days, and now its huge trunk and great diameter preserve it from the attacks of the woodman. Long may it live and flourish. An enlightened spirit of agriculture is now dawning upon our country, and the public attention is directed to the importance of protecting trees and engaging in their cultivation.

Liriodendron tulipifera; this is called the tulip tree in New England, white wood in western New York and in northern Ohio, and poplar in some of the western and all of the southern States. It is extensively diffused, and taking in all its dimensions is probably the largest tree east of the Mississippi river. It is much used for building and cabinet purposes, probably more so than any other tree excepting the White Pine. In New England and New York, it is rarely more than four feet in diameter, but in the western States it is often five and six feet in diameter. Michaux measured one near Louisville, Kentucky, which was nearly eight feet in diameter, and he

relates that he saw much larger ones in other parts of the State. During the past summer I measured several in Indiana and Kentucky, which were between six and seven feet in diameter. In the rich coves at the base of, and among the southern mountains, these trees grow to their greatest size. There is one near Cold Spring, on the banks of the Pigeon river, among the Smoky mountains, in Haywood County, North Carolina, which is 33 feet in circumference, at 4 feet from the ground, and I measured another recently in Siveur County, Tennessee, near the base of the Smoky mountains on the Little Pigeon river, which is 29 feet 3 inches in circumference, at 4 feet from the ground, and my friend T. J. Lenvir, Haywood County, North Carolina, measured another near Waynesville, North Carolina, which is 27 feet in circumference. Besides these I have measured many among the mountains of North Carolina, ranging from 6 feet to 8 feet in diameter during the present autumn.

These trees generally have a trunk nearly cylindrical, and of nearly uniform size, to the height of 60 or 70 feet, the whole tree being from 120 to 140 feet high. When cultivated they send forth numerous expanding branches affording an ample shade. Their neat, glossy, singular leaves, and beautiful tulip shaped flowers, render them very ornamental and worthy of general cultivation. They belong to the natural order Magnoliaceae, their fruit resembling the Magnolia or Cucumber tree.

ON MULCHING.

BY WILLIAM SAUNDERS, GERMANTOWN, PENNSYLVANIA.

IF we were asked to say what practice, founded on *principle*, had been most beneficially introduced into our horticulture—we should answer *mulching*—mulching suggested by the need of moisture in our dry climate, and the difficulty of preserving it about the roots of plants.—*A. J. Downing.*

At the late meeting of the American Pomological Convention the subject of mulching was brought up, and an opinion unfavorable to the practice prevailed among those who participated in the discussion. As there was no vote taken on the question, it would be unfair to conclude that the sense of the meeting was opposed to the practice, as might be inferred from the published reports of their proceedings.

It is perhaps to be regretted that the Convention should undertake the discussion of such subjects, its time being too limited to do them justice; otherwise we can hardly conceive it possible that a practice so generally conceded as being in the highest degree beneficial, should be branded as injurious, at least without some explanatory qualifications.

The object of mulching is to maintain a uniform degree of moisture in the soil by arresting surface evaporation. This is most effectually secured by the interposition of a stratum of *air in repose*. Bodies are said to be good or bad conductors just as they are solid or porous.

Iron is a better conductor than wood; granite stone a better conductor than brick. Hard pressed soil is a better conductor than soil that is loose and porous. A beaten path is warmer in summer and colder in winter than the cultivated ground alongside of it; its particles being in close contact,

its conducting powers are increased ; the arid winds of summer passing over its surface carries off the moisture which the heat evaporates, and renders it unable to support healthy and vigorous vegetation ; therefore in covering with manure, tan, or charcoal dust we apply a material that contains more air than the soil, and in a position not easily disturbed.

As to the value of mulching as an auxiliary to successful culture, the result of practical experiments fully confirms all that theory propounds ; and in the case of newly planted trees the preservation of a uniform degree of moisture in the soil surrounding their roots is the most important point of management, and, other things being equal, trees will languish or grow just in proportion as this condition is secured.

One of the speakers at the Convention alluded to, observed that, "mulching had always proved of no value, but rather injurious. I have found that the mulch dries out in summer when most needed, so as to be of little value, and the trees cast their leaves." This might well be taken as an argument in favor of mulching, as the trees lose their leaves when the mulching fails. The evident course, to pursue in such cases, would be to renew the mulch and so maintain vigor and preserve the foliage. The drying out of the mulch is no argument against its value. Such materials as tan bark, wood chips, charcoal dust, or even barn yard manure does not readily dry out, or decay. It cannot be considered a fair test to allow the mulch to dry out "when most needed."

Another objection to mulching is the harbor it provides for mice and insects. When mulching has been left on during winter I have seen much destruction from mice eating the bark and roots, but I have never seen mice do injury to trees in clean, cultivated ground, whether mulched or not ; and in regard to insects I would express a contrary opinion, and assert that were it convenient to keep the soil constantly covered with a suitable mulch, we would abridge, to a considerable extent, the increase of insects ; the shade and moisture of the mulching being inimical to their habits.

A further objection was brought forward, "that a heavy mulch absorbs all the water from a light shower, and the soil below is dry." This, as an objection, is practically unimportant.

Although mulching is apparently a simple operation, yet care is required in its application. Before mulching a newly planted tree, if in the spring, shape the soil in the form of a basin, extending the rim beyond the extremities of the roots, thus rains will be retained and artificial waterings effectually applied, if found necessary. If planted in the fall, the soil should be mounded slightly to the stem and well firmed round the roots ; in either case be careful that the mulch does not approach nearer than within 10 or 12 inches of the stem of the tree. Winter mulching should be heavy to prevent frosts from reaching the roots, and will be found of great benefit in clean ground, but if rough and weedy so as to encourage mice, no mulching should be applied during winter, and every precaution taken to prevent them from eating the bark, such as trampling around the roots after heavy snows, and keeping the soil well pulverized, clean and compressed.

To be effectual it is not necessary that the mulching in summer be heavy, three or four inches in thickness of well rotted manure I consider the best that can be applied ; if tan or charcoal dust, a thickness of two inches is sufficient ; the short grass cuttings of the lawn forms a very suitable material, but it must be spread thinly so as not to ferment, which it is very

sure to do if applied wet in quantities ; a mouldiness frequently originates after fermentation ceases which is very injurious. Some years ago my attention was directed to a plantation of young trees that had suddenly and prematurely lost their foliage. They had been carelessly mulched with rough hay, and it was discovered that a peculiar fungus had originated in it and spread over the roots, and in some cases enveloped the stem of the tree. The mulching was immediately removed and the soil forked over ; the growth of the fungus was arrested, but several of the trees died. I mention this as a warning to inexperienced *mulchers*.

The benefits of mulching may be carried into the vegetable as well as the fruit garden. Mulching between the rows of growing crops I have found to be of great value. The soil is not compressed by rains nor baked into a crust by sun, weeds are kept down, evaporation arrested, and the crops materially increased.

THE BASKET WORM.

BY JACOB STAUFFER, LANCASTER, PENNSYLVANIA.

I SEND a neat print of the Basket-Worm, alias Drop-Worm, and Sack-bearer, from the german "Sacktrager," which Hübner named *Canephora* or Basket-Carrier. And the Rev. L. Guilding named it *Oiketicus*, which Dr. Harris says should be written *Œceticus* as it implies "a solitary inmate of ones own house."

Like all rogues, by whatever name known, it is none the less mischievous, and demands a watchful eye, to which I can testify, having during the summers '55 and '56 destroyed a vigorous Arbor vitæ, which ornamented the front yard of my late residence in Mount Joy.



THE BASKET WORM.

The genera *Oiketicus* and *Psyche* are remarkable for the habit which their larvæ have of constructing for themselves portable cases of bits of grass, sticks or leaves, in which they reside, and undergo their transformations.

In this respect these insects represent the *Phryganeidæ*; indeed Mr. Newman does not hesitate to assert, that they ought to be removed from the present order. The females being wingless, never leave their cases, and according to the observations made by Ochsenheimer and Ingpen, it would seem that these females produce fertile eggs without fecundation.

My highly esteemed friend, S. S. Rathvon, Esq., of Lancaster city, who is one of our most thorough entomologists, has observed this insect since 1850, and wrote out several interesting accounts which were published in the April and September numbers of the Farm Journal for 1854, and named

it the *Oiketicus Pennsylvanicus*; whether distinct from the species named by Harris, *Oiketicus coniferum*, I will not attempt to decide. Yet I confess, that I could discover no difference between the *larvæ* inclosed within cases formed of the leaves of Pines, arbor vitæ, apple, quince, &c., of which I have various illustrations in my collections.

Mr. Rathvon states, truly, that "when the young 'Drop-Worm' is first excluded from the egg (May 24 and 26) it is about one sixteenth of an inch long; the head and three anterior segments, and also the pectoral or proper legs, are of a dark, glossy chestnut brown or nearly black color, the remaining portion of the body is a little lighter or rather a tawney. They descend by a fine silken cable, in rapid but regular successive order, from the lower end of the suspended folicle of the previous season, and light upon the branches and foliage immediately beneath, unless they should be blown to one side or the other by the wind; and are very active, using only the front or pectoral legs in locomoting and carrying the abdominal portion of the body erect. Immediately, or in a very brief period, after exclusion, they commence forming a cylindrical covering for the body out of silken tissue, coating it externally with small particles of whatever substance they may come in contact. These coverings in a day or two assume a truncated cone shape, are carried erect, having both ends open (through the the upper one of which the excrement is ejected) and may be found distributed along the smaller branches, or upon the upper surface of the leaves of trees; at which time they appear like minute deadened leaf-buds, naturally belonging to the tree, but on a closer examination it will be found they have gnawed away a small portion of their epidermis, which has been added as an outer covering to their habitations, perfectly disguising them, but at the same time leaving a trail of the inner bark exposed to view."

The above is verbatim from Mr. Rathvon's description, I shall take extracts only of a few prominent points from the remainder of his able article in my own language.

During the month of June and July they are very destructive to foliage, when their habitations assume a pendant position. From the first till the end of August the *larvæ* are engaged in securing their sack-like habitations, preparatory to undergoing their transformations. The female with instinctive foresight is careful to fasten her habitation to a healthy living branchlet, securing the upper end, and carefully guarding against the wind and weather of the approaching winter season, undergoing the change from the larva to the chrysalis state in about thirty-six hours. Never leaving her domicile until ready to perish, after having well stored the same with the eggs for her future brood, even sometimes she dies in her feeble attempt to escape, clogging up with her attenuated body, the opening through which her progeny escapes.

The male pupa is readily distinguished from the female, being rather smaller, and exhibits the wings, legs, &c., distinctly. And is less considerate in the care he takes of his residence, attaching it to any convenient object, having no use for it after once developed into a small mole-colored moth, which takes place about the end of September.

When on the wing he seeks the secluded female, so modestly retired, introduces himself to her, posteriorly, elongating his retractile abdomen, and as friend Rathvon says "he has only to pat her amatively and cozily on the back, and say, in effect," be "fruitful and multiply" and it suffices.

To one not acquainted with these insects, the male and female in their perfect state would seem as belonging to different orders of creatures. The name drop-worm is very appropriate, as they drop in quick succession from the suspended folicles and when changing from branch to branch, in their work of destruction, both for food and building material, making sad havoc of the foliage.

The most certain mode for destroying them, is to pick them or the folicles off by hand, and committing them to the flames. Mr. Rathvon says he has observed two species of *Flymenoptera* that destroy the larva of *Oiketicus*. I witnessed a very interesting fact; a large species of the *Ichneumons*, lit on one of the tough bristly folicles, and commenced pinching it with its long jaws, irritating the ensconced larva, till it menacingly thrust out the upper portion of its body, when the wily fly gave the larva a dab with its ovipositor, and no doubt lodged an egg, before the silly creature could again withdraw into its domicil.

GRAPES.

Mr. Editor.—My attention has been called to an article of Mr. Allen's in reply to Mr. Eaton of Buffalo, as to the difference between the so-called Royal Muscadine, and Chasselas Fontainbleau grape. I have had the experience of some twenty-years among vines, and if your humble servant had the capacity to see and know the difference between a cabbage and a cauliflower during that period, perhaps it will be generally conceded he knows the difference between two varieties of grapes. Now to the subject.

The Royal Muscadine of England, and the Chasselas Fontainbleau of France, are identical and the same grape. But here let me be understood. There is in this country as well as in England a confliction of nomenclature. We have there as here a White Muscadine, or White Chasselas—the latter and the former are confounded. The White Muscadine bunches are of medium size, shouldered, rather loose and long; berries globular, light green, flesh rather firm, flower never large, yet passable.

Royal Muscadine or Chasselas Fontainbleau, bunches large and shouldered. Berries round, middle-sized, growing crowded, amber color; when ripe flavor excellent; wood stronger and darker than the above. This variety we grow, and the bunches are commonly one and a half pounds. Again, Mr. Allen is of the opinion that the White Nice and Royal Muscadine are the same. Now to me this difference is monstrous. I cannot conceive any greater difference existing between any two vines (except that of white and black) than exist between the Nice and Royal Muscadine, or Chasselas Fontainbleau. However, I will endeavor to describe the Nice as I have known it in the Horticultural Society's Garden in London, seen it elsewhere, know it and grow it myself. First, the vine is a very strong grower, almost as strong as the Syrian, foliage very large. I have just measured some of the leaves and find they are sixteen inches long by twelve wide, very downy underneath the leaf; young wood rather light, with a red stripe, bunches very large, often twenty-four inches long and twenty inches wide. My experience is that, with good culture the size of the bunch improves with the age of this vine. Berries medium size, appear soon after setting

to be rather thinly set on the ramifications of the bunch. Footstalk of the berry very long. Color yellowish green, when ripe.

In reference to the footstalk of this grape, I do not know any other that resembles it. It seems to carry each berry erect, not hanging one on the other for support like the Syrian, Palestine, or Barbarossa. Again, the size of the foliage, also the color, is vastly different from the Royal Muscadine; the leaves of the latter measuring ten inches over, and of a light green, the former sixteen inches and dark green. The Royal Muscadine weighing one pound and a half. The White Nice weighing five and often six pounds. My conclusion is, that Mr. Allen does not grow this White Nice, from his own description of it, but has the Royal Muscadine for it. Again, the old White Muscadine is plentiful enough all over the country for Chasselas Fontainebleau; and this explains the mystery with Mr. Allen in his not being able to discover much difference between the two. No person that ever grew White Nice, true to name, could confound it with any of the Chasselas. Now we are speaking of grapes I may mention the Barbarossa, or Prince Albert an identical. And with me it deserves a better character than is generally given it in reference to its fruitfulness. I have cut this season 35 pounds from an eye struck and planted in the spring of 1856, many of the bunches weighing 5 pounds and one 6 pounds. Please remember this is not guess work, for we weigh all the fruit twice over, on the premises and in New York City where it is sold. This was produced too, without any dead horses in the borders. Yours very respectfully, FOX MEADOW.

NEW PLANTS.

VIOLA PEDUNCULATA, Torrey and Gray.—The handsomest we know of the genus, albeit lacking the fragrance of the great favorite, the Sweet Violet of Europe. It was one of the many discoveries of Douglas in California, during the last of his journeys, and but a little before the accident which caused his death in the Sandwich Islands. It has been since found by Mr. William Lobb. Beautifully dried specimens were sent home by him, and plants were reared from seed by Messrs. Veitch & Son, Exeter and Chelsea Nurseries, the exhibition of which at the Horticultural Society naturally attracted much attention. It seems well suited to cultivation in a cool frame. It flowers copiously in May. Mr. Nuttall detected it as far south as Monterey. *Botanical Magazine, t. 5004.*

The flowers are a bright golden yellow with a pair of large blood red blotches at the back.

AZALEA OCCIDENTALIS, Torrey and Gray, Bot. Mag., t. 5005.—The plant just published under this name in the Botanical Magazine is known in gardens as *Azalea Californica*. It has pale yellowish flowers, and is probably as Sir William Hooker suggests a mere form of *A. calendulacea*, of little horticultural importance.

ARALIA LEPTOPHYLLA. Nat. ord., *Araliaceæ*.—Lately introduced from New Caledonia, by Mr. Milne. Stem upright, round, and smooth, producing branches with difficulty. Leaves about two feet long, lanceolate, narrow, dark green, with reticulated silvery white veins, the mid-rib being particu-

larly conspicuous from its prominence and bright color; margin entire and slightly waved, gracefully drooping towards the extremities. As the plant has not yet flowered in this country I cannot describe the inflorescence, but it is, in all probability, worthless in a horticultural point of view. Its best quality is, doubtless, in the beauty of the foliage, and in this it is not surpassed by any other plant of the kind, for it combines beauty of form with pleasing colors; and the stem, from base to summit, being thickly and regularly clothed with these beautiful leaves, it presents altogether a charming appearance. One part peat and two parts good strong loam is the compost it succeeds in best, and plenty of moisture at the roots, but not stagnant with the moist warm atmosphere of the stove, is an essential requirement in the culture of this plant.—*London Florist*.

GOETHEA STRICTIFLORA. Nat. ord., *Malvaceæ*.—Native of Brazil. Stem upright, round, numerously branched. Leaves broadly ovate, acute, light green; veins prominent; margin slightly and irregularly notched; petiole short, with two linear lanceolate stipules at the base. Flowers small, with four cordate bracts, longer than either calyx or corolla, and quite inclosing both; red. Calyx divided into five short ovate segments; red. Corolla deeply divided into five cuneate segments; red, and somewhat membranous.

It is in the profusion of the flowers that the beauty of this plant rests. The old wood of the stem and branches is literally covered with the pretty little flowers at all seasons, the plant being irregular in its blooming season. It requires the treatment common to stove plants, and peat and loam, the latter predominating, are the compost in which it delights.—S. G. W., *Kew*.

PHILODENDRON ERUBESCENS. Nat. ord., *Aroideæ*.—Plants of the Arum tribe are not by any means so generally cultivated as they deserve to be when we consider their singular and varied forms, fine foliage, peculiar and often richly colored inflorescence, together with, in some cases, a delightful scent. In tropical countries these plants constitute a striking feature, while they are as well among the most singular inhabitants of our stoves. For out-of-door culture also, there are some very pretty plants belonging to this natural order. What is more curious, and indeed we may say, so prettily striped, as the white and deep purple, almost approaching to black in the spathes of *Arum triphyllum*, var. *zebrina*, a perfectly hardy border plant, and yet how seldom is it seen in cultivation! The present plant, *Philodendron erubescens*, is one of the most conspicuously handsome of the tribe. The spathe is boat-shaped, six or seven inches long, of a deep blood-colored purple on the outside, and bright crimson within; the spadix arises like a small column of ivory, and the foliage is of fine size and rich glossy green. It is closely allied to *Arum grandiflorum* (*Philodendron Hookeri*, of Schott), but differs totally in the color of its spathe, which in the latter plant is white or cream colored. The native country is unknown, though there is much probability of its being found in the Caraccas. It requires stove treatment. (*Bot. Mag.*, 5071.)

EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

THE GRAPES.—We present our readers in the present number with much matter regarding grapes, a topic of increasing importance. Mr. Charles Downing's article will be read with interest, and in connection with it we refer to the reliable catalogue of Dr. C. W. Grant, of Iona near Peekskill, New York, who has a very valuable stock of grape vines, for the supply of dealers and growers. Dr. Grant now brings out the *Anna*, which we have twice tasted, and we think well of it, though for excellence, independent of growth, our own choice is as follows: Rebecca, Delaware, Diana, Clara. *Anna* may prove superior, as it gets more growth and age. Of the *Diana* Dr. Grant says:

"The 'stock' (constitution) of the vine has been yearly developing, and has now attained an excellence that at first the most sanguine scarcely hoped for. It has generally been considered a feeble grower, as well as small and unproductive; and from unfavorable circumstances such it appeared at the beginning. For a large price I procured in the spring of 1850, twenty-five plants which were so small and languishing in appearance, as to be regarded with despair, rather than pitying hope; and for two years, under the most tenderly cherishing nurture, my success was not very encouraging, even with those that survived; for with my best care, life had let go its feeble hold of some of them. After they became strong enough for layering, the progress of development was very encouraging; and each year has marked a decided improvement on the foregoing up to the present; and this has afforded the most gratifying result of all. For, notwithstanding the very unfavorable character of the season, not only have my own vines given better and handsomer fruit than ever before, and this uniformly on all my vines—those the second year from planting giving fine crops, and those planted this season (one year old at the time of planting) have given excellent specimens of fruit; and those to whom I have sent large vines, have expressed their gratitude to me for the same performance of their vines. This, although quite satisfactory, is far from the full capability of the *Diana*, for every well-treated vine improves for ten years from planting."

We find that a postscript to Mr. Downing's article has been omitted. It is as follows:

P.S.—I will here state that I have no vines for sale, and am not connected either directly or indirectly with any Nursery establishment. I say this, because it appears not to be generally known that I discontinued the Nursery business some five or six years since.—C. D.

AQUARIA.—Mr. Charles E. Hammet makes and furnishes Aquaria at Newport, R. I. His agent in Philadelphia is J. W. Queen, 924 Chestnut Street. It is rather amusing to read his list of prices of the living contents: Green weeds are 10 to 12 cents each; Sea Anemones, (*Actinia*) 12 to 75 cents; Star Fish 12; *Serpula* 12; Crustacea 12 to 37; Molluscs 12 cents to

\$4.50 per doz. ; Fish 6 to 50 cents each ; all "according to kinds and quality." All appliances are to be had : as, net on copper wire with handle, 25 cents ; copper hook on handle for arranging objects, 12 cents ; spoon on handle for removing objects, 20 cents ; real sea water, per gallon, 10 cents, and so forth. Soldier Crabs, King Crabs, Flat Fish and Sticklebacks, with "small Sheep's Head," and "small Lobsters," at "reasonable prices." It must be a novel feeling to those long neglected marine wonders to find themselves in "a lady's parlor," and the pets of a fire-side. At best it is only a little to be preferred, some experiences prove, to being boiled at once, for want of proper care.

ASTONISHING.—The following letter was actually received at the Post Office, Fishkill Landing, N. Y., the past summer.

MIDDLETOWN POINT, N. J. August 30, 1858.

ANDREW J. DOWNING, ESQ.—DEAR SIR.—If it is not trespassing too much upon your kindness you will confer a *great* favor by forwarding two of your autographs, as a friend and myself are collecting autographs of distinguished persons, and would be much pleased to have yours grace the number. With respect, I remain yours, &c.

We hope not be offensive if we remind this toady of knowledge, that the pursuit he is engaged in is one of *utter folly*, when it is not accompanied by information and good sense ; it might serve him the same useful purpose to collect horse-shoe nails, or as a numbscull once did in England, make a *complete* volume of turnpike tickets !

The French peasants, it was said, voted for their model emperor under an impression that he was the "little corporal," still alive, and the next we hear from the fountain head, will be advertised letters for General Washington, Presidents Jefferson, Madison, &c., requesting their autographs for a collection of "distinguished persons." The only excuse we can make for this kind of nonsense is, that it is undertaken, as we believe it sometimes is, by schoolboys ; but even then they ought to be well castigated when they do it so ignorantly. What pleasure or food for the mind can a "collection" made in this way be to the possessor ? Just about the same as the geological collection, every item of which was labelled by its young lady owner, "N. K.," and when asked what that meant, she replied with astonishment, "Why, Natural Kuriosity, to be sure."

SUCCESSFUL canvassers frequently remit nobly ; Mr. John King, of Dubuque, Iowa, sends \$20 for ten new subscribers, taking back numbers, and says this is the result of "one hour's exertion." He also says, he has raised about two acres of very fine Catawba grapes, the present year, excelling the Cincinnati grapes. "We are going into business quite extensively. The lead mining region seems well adapted to the raising of this delicious, healthy, and beautiful fruit."

TRAVELLERS.—What a pity that so many travellers leave home without any knowledge of science. Geology and Botany should at least have some entrance in their brains, before they attempt to enlighten the public. We make these remarks in consequence of having attempted to peruse a book, entitled, "From New York to Delhi, by way of Rio Janeiro, Australia and China." Published by the Appletons. The young writer actually remarks of the vegetation of Australia, and it is all he says about it, thus :

"Sydney has the advantage of a finely kept park, consisting of about 30 acres, inclosing a botanical garden in which are the plants of all climates, *growing side by side*, in the open air. The oak, however, and other Northern trees do not seem to thrive, all the specimens I saw being puny and stunted."

Why, did the writer know that he was surrounded by a flora the most wonderful in the world ? It is remarkable that he recognized even a stunted oak. In the Himalaya Mountains he does not think of the rhododendrons, probably had never heard of such a thing. In China the same deficiency. In Rio Janeiro : "I saw much coffee growing ; *it looks like a hardy plant*,

and did not seem to have been carefully cultivated. Banana trees, of course, to be seen everywhere, being somewhat of a weed among the trees." Had he been a little keener, he might have learned that the coffee tree will not grow in the blaze of the sun, and that the banana is *planted* to shade it, and thus to obtain two crops. The banana "somewhat of a weed"!!

CUPHEA EMINENS.—This fine plant has bloomed with us the present season in very great perfection; it makes as fine a green-house plant as can be desired. Will our friends in Boston take notice of this fact?

GARDENS.—At the late meeting of the British Association, Mr. Ward urged the importance of cultivating a taste for legitimate horticultural pursuits among the members of the laboring population, as it was a well-established fact, that whenever a pink, or a carnation, or a rose was seen outside a cottage, there was a potato or a cabbage for the pot within; that if there were not happiness, there was the nearest approach to it in this world, content:

Yes, in a poor man's garden grow
Far more than herbs and flowers,—
Kind thoughts, contentment, peace of mind,
And joy for weary hours.

MILDEW AND RED SPIDER.—We understand that there is great probability of an effectual remedy for mildew and red spider having been discovered, wholly free from the objections attaching to sulphur either in powder or in a volatile state. How valuable that agent is we all know; but it is troublesome to apply, uncertain in its action, and, if mismanaged, more mischievous than the evils it counteracts. As for example when it is fired, the effect of which is to charge the atmosphere with fumes of sulphurous acid, one of the most fatal to vegetation of all known substances.

At present our information amounts only to this: that Mr. Wilson, the very able and scientific manager of Price's Candle Company, has prepared a soap, which being dissolved in water and applied with a syringe does effectually and without the least risk, all that flour of sulphur can do. It is said that one of the principal nurserymen near London has been trying the soapy water, of different strengths, and is very favorably impressed with its efficacy. Six ounces of the soap in a gallon of water killed mildew for the time and continued to keep it down when applied weekly. Pot Roses after three applications became nearly clean, and were in fact saved; their soft young points indeed were killed, but that was of no importance; the rust of Moss-roses disappeared before its action. In other hands red spider was effectually kept down; 1 lb. of the soap dissolved in 4 gallons of water completely cleaned even Peach trees after two or three applications, the trees having been well syringed a day or two afterwards.

The name of this new soap or substance is, we are informed, "The Gerhurst Compound," and if it is found in other hands to preserve the good qualities now ascribed to it, Mr. Wilson will certainly have conferred one of the greatest possible benefits upon horticulture. A trial is about to be made of it in the Garden of the Horticultural Society, at Bowood, Trentham, Chiswick House, and several other large establishments; but, owing to the lateness of the season, we fear that no good results can be looked for at present.—*Gardener's Chronicle*.

RINGING THE GRAPE VINE.—Another report on Ringing Grape Vines has been supplied by Mr. Rivers with specimens of the result, which, as will be seen, is encouraging enough to justify further trial.

No. 1. A branch of Muscat of Alexandria, which had been ringed in a cold Vinery, produced a good bunch, nearly ripe, the characteristic yellow even appearing; the bunch on an unringed branch in the same house was much smaller and very far from ripe.

No. 2. A branch of Black Hamburg produced a large well-grown bunch, but it was very badly colored, and far from ripe; an unringed branch bore a bunch intensely black and perfectly ripe, but not half the size of the other.

No. 3. A White Frontignan Vine that had been ringed produced two bunches nearly ripe, but smaller than usual; all the others shanked; an unexpected result, for Mr. Rivers informs us that at first nothing could be more promising than the appearance of these bunches. The shanking occurred all at once in one or two days.

If we regard the last case as inconclusive, the shanking being due, not to the ringing but to something wrong at the roots of a Vine very apt to suffer in that way, then it would seem that ringing has the effect of enlarging considerably the bunches, as was to be expected, from the inevitable accumulation of good sap above the ring and in the vicinity of the Grapes. Acceleration of ripening in the Muscats was counterbalanced by a retardation of ripening in the Hamburgh. The trial should therefore be renewed next year; and in forcing-houses as well as in a cold Vinery.—*Ibid.*

RINGING THE GRAPE VINE.—The last Gardener's Chronicle says:—

With reference to the experiments on Ringing the Vine, last week communicated by Mr. Rivers, that gentleman has sent us another bunch of Black Hamburgh Grapes which has evidently suffered injury; and he states that several more are in the same condition, while bunches on branches not ringed are all perfect and good. In the instance now before us we incline to the belief that the ringing has been too severe; either too deep or too broad, or both. For we find the wood below the ring very nearly dead, which would of course render it impossible for the Grapes to reach maturity. Undoubtedly the degree of ringing that may be allowed is a very important point for determination. Our own opinion is that *the ring ought not to be wider than is necessary to prevent the return of the sap by the bark, nor deeper than the bark itself, care being taken not to injure the alburnum.*

NURSERY OF L. V. HOUTTE, GHENT.—It is needless to say that this is one of the most important commercial horticultural establishments on the Continent. Visitors to Ghent make a rule to inspect it, and we never yet met with a lover of gardening who was disappointed. During the past summer it has had most formidable difficulties to contend with, now happily surmounted. Of all things water is the most necessary in gardens, especially on the Continent. M. V. Houtte found himself suddenly without any. The place had always been amply supplied by seven deep wells sunk some 20 years ago. These suddenly became dry. The water they had supplied had, moreover, deposited so much sediment in the pipes of his hot-water apparatus that it became choked up and would work no longer. Two important operations had, therefore, to be undertaken; to secure a new supply of water, and to reconstruct the whole heating apparatus of the nursery.

To obtain an unfailing supply of water advantage was taken of the dryness of the Scheldt itself to sink in its bed a huge coffer, the sides of which were pierced with holes. This was connected by means of a cast-iron 3-inch pipe 1900 feet long with a forcing-pump worked by a little donkey steam-engine, capable of throwing the water 26 feet high into a new reservoir holding nearly 9000 gallons. From this reservoir the water now flows through a fountain into a small "lake" which decorates the entrance of the establishment, and feeds 180 smaller cement basins all placed on the same level, whence it may be distributed over every part of the 8 acres, thus affording an effectual power of irrigation. We understand that some acres of Tea Roses and Rhododendrons which are thus flooded occasionally, are most grateful for the ammonia and phosphoric acid which the dirty lazy Scheldt conveys to them.

The new heating has been accomplished by means of the one-boiler system, for which Mr. Weeks was called in. Sixteen stokeholes to 16 boilers had been used. For these was substituted one stokehole and one boiler, with a boiler in reserve in case of accident. The other day, says a correspondent, "*on a mis le feu au poudre, tout se chauffait a ravir, et M. V. Houette était des plus satisfaits.*" The work was done, not only well at last, but satisfactorily from the beginning. Mr. Weeks's foreman showed that he perfectly understood his business, and this specimen of

concentrated heating has added another interesting feature to the great establishment in which it is placed.

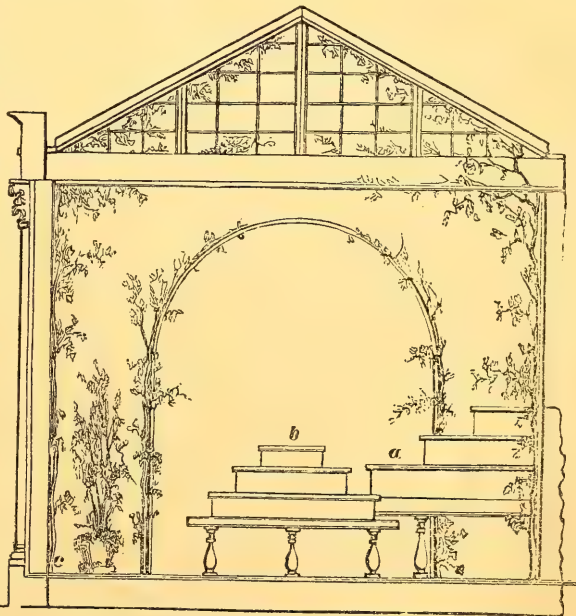
We learn that the *Flore des Serres*, the regular appearance of which has been arrested by the accidents thus described, is about to reappear with all its former punctuality.—*London News*.

ANSWERS TO CORRESPONDENTS.

BEE KEEPER. It has been ascertained that bees will work as well in hives of glass—say each side formed of four double parallel plates. As thus formed the escape of heat is so effectually prevented that the little fellows work without the necessity of covering the hive with any opaque material; and thus they are always open to inspection without being disturbed by the sudden emission of light into a hive previously dark. An interesting experiment which we have seen practised with bees is to empty an old sideboard, a thing now often “given away;” place it in a living room, bore small holes in the wall, put a movable glass plate behind each door and a swarm within each compartment; you have then the family within the house, and can look at their progress without leaving the house, and probably, if there is food enough in the neighborhood, cut your honey when you want it.

BEATRICE. The fugitive color called “ladies despair,” produced from a lichen, has been successfully fixed by a silk dyer of Lyons, who, after five or six years’ trial, has obtained a permanent dye, so that you may hope to have “more of it” from the shops.

W. T. W. The accompanying plan of the interior of a green house suitable for plants and ferns, is one admitting a great amount of light. The stages, fig. 1, *a*, *b*, display the plants to advantage, and would be equally adaptable with a little ingenuity, to either a lean-to or a span roof. The front sashes extend without interruption of timber or brick-work, from the roof to the ground. At the roof *c*, are placed the running vines, and pot plants set upon the ground. The heating arrangements should be a hot water pipe; this in a small building is sometimes carried through from an adjoining kitchen, and economy of building and fuel thus accomplished; a plan that, though rarely adopted in America, might be advantageously applied in many instances with effect.



CATALOGUES, &C., RECEIVED.—Annual Report of the Managers of the Chester County, Pennsylvania, Agricultural Society, for 1858, West Chester. A stately pamphlet and full of interest. This county takes rank in its intelligence no less than its valuable productions with any in America. They don't make quite so much noise about their sayings and doings as some others, but they are always useful and practical. The address is very clever.

Address on Horticulture. By David Thomas, Union Springs, New York. Printed by several friends of the author, and very properly, too, for it is so full of practical hints and suggestions as to deserve a more extended circulation, and we shall take pleasure in giving our readers, very soon, a taste of it.

Hooper and Brother's Catalogue. Cherry Hill Nurseries, Westchester, Pennsylvania. This is a portly and valuable catalogue, and we beg every one of our readers in "the region round about" to possess themselves of it before purchasing.

Address delivered before the New York state Agricultural Society at Syracuse, October 8th, 1858. By Joseph P. Williams, President of the Michigan State Agricultural College. Sensible, clever, and useful.

Catalogue of the Officers and Students of the Bordentown, New Jersey, Female College. Rev. John H. Brakely, A.M., President and Proprietor. A very successful institution, and deserving of the patronage it liberally receives.

Establissement D'Horticulture de Portemer Fils, a Gentilly (Seine) rue de L'Hay.

The Covington Nursery; Catalogue for 1858. By Harry Camp and Son, Covington, Ga.

The Southern Nursery, near Covington. By Harry Camp, Covington, Georgia.

Catalogue of Fruit Trees, Ornamental Shrubs, &c., at Mattison's Nursery, Paducah, Kentucky.

Descriptive Catalogue of Fruits, Hardy Ornamental Trees, and Shrubs, of the Nashville Nursery, and Fruit Garden, Nashville, Tennessee. Louis C. Lishly, Proprietor. A large and valuable collection.

Descriptive Catalogue of Fruit and Ornamental Trees, Plants, Shrubs, &c., of Pleasant Ridge Nurseries, Bendersville, Adams County, Pennsylvania. Thomas E. Cook and Sons Proprietors.

Catalogue for 1858 and 1859 of Gloaming Nurseries, Clarkesville, Georgia, by James Van Buren. Excellent.

"What may be learned from a Tree," is the title of a forthcoming volume by Harland Coultas, a botanist; he has issued a specimen of the first pages, which promise entertainment as well as information. It is to be published by subscription in Philadelphia.

THE NEW EDITION of Downing's Landscape Gardening, will be published in February next.

SIR WILLIAM J. HOOKER.—We learn with pleasure that Sir William Hooker contemplates paying a visit to this country the ensuing season. He will be warmly welcomed by his many friends, and by those Americans who have been the recipients of his attentions at Kew Gardens.

Grape Vines, Trees, &c., cultivated and for sale at the East Camp Nurseries. Wm. Tompkins, Germantown, Col. County, New York. Mr. Tompkins advertises 12,000 Grape Vines at reduced prices, with a great variety of other fruit, and ornamental plants and shrubs.

Landreth's Rural Register and Almanac for 1859. For gratuitous distribution. As usual filled with valuable information, practical and to the point. Every rural home should have it hanging for reference where all could have access to it.

Gossip.

MELONS.—The most surprising plant of the Desert is the 'Kengwe or Keme' (*Cucumis caffer*), the Water Melon. In years when more than the usual quantity of rain falls, vast tracts of the country are literally covered with these Melons; this was the case annually when the fall of rain was greater than it is now, and the Bakwains sent trading parties every year to the lake. It happens commonly once every 10 or 11 years, and for the last three times its occur-

rence has coincided with an extraordinarily wet season. Then animals of every sort and name, including man, rejoice in the rich supply. The elephant, true lord of the forest, revels in this fruit, and so do the different species of rhinoceros, although naturally so diverse in their choice of pasture. The various kinds of antelopes feed on them with equal avidity, and lions, hyænas, jackals, and mice, all seem to know and appreciate the common blessing. These Melons are not, however, all of them eatable; some are sweet, and others so bitter that the whole are named by the Boers the 'Bitter Water-melon.' The natives select them by striking one Melon after another with a hatchet, and applying the tongue to the gashes. They thus readily distinguish between the bitter and sweet. The bitter are deleterious, but the sweet are quite wholesome. This peculiarity of one species of plants bearing both sweet and bitter fruits occurs also in a red eatable Cucumber often met with in the country. It is about 4 inches long, and about 1½ inch in diameter. It is of a bright scarlet color when ripe. Many are bitter, others quite sweet. Even Melons in a garden may be made bitter by a few bitter Kengwe in the vicinity. The bees convey the pollen from one to the other."—*Livingstone's Africa*.

GRAPE VINES, &C.—The quality of a particular vegetable is not unfrequently affected by external influences so that it assumes a different character, which is distinctly imprinted upon the leaves or other parts, and may even to a certain extent be perpetuated. This property for the most part belongs to all organic bodies, and may be observed equally in the animal as in the vegetable kingdom. The dog is always a dog, but the Newfoundland and the lap dog, the sheep dog and the greyhound, differ from one another in no small degree. The cow is everywhere a cow, but differs in form in every part of the earth in which she is found. Plants being still more dependant upon external influences than animals (which are restricted to no particular place), exhibit this peculiarity in a very high degree. The varieties of Geranium, Pelargonium of the Rose and Dahlia, which belong nevertheless to one genus, are unlimited. The difference is often impressed still more markedly upon the fruits which the plants produce. There is, indeed, an identity in the nature of Apple-trees; but any one, however ignorant of botany, can distinguish numerous varieties of this fruit, varieties not only of form and size, but also of color, taste, and smell. The Vine ranks among those plants which are very dependant (at least in so far as regards the fruit it produces) upon external influences: color and size, form and taste, aroma and productiveness, vary in this case in so remarkable a manner as might lead one almost to regard the Vine as a peculiar gift of the Creator's bounty. Should the reader wish for an example of the immense variety of Vines, we will only remind him that Chaptal, when Minister of the Interior, caused 1400 different species of Vines to be transplanted out of France alone into the garden of the Luxembourg. The like variety may be observed not only in Grapes which have been grown in different parts of the earth, but even in those produced in the same country, and growing on the same spot. And, indeed, though less strongly marked, we may perceive a like difference even in the Grapes of one Vine. Protect one cluster of Grapes from too great exposure to the action of the sun, and cover it with a bell of dark glass, or with oiled paper, while you leave another exposed, and you will produce a much more finely scented fruit in the former than in the latter. It is not, therefore, strange that the Grapes which grow on the sunny side of the Johannisberg should be very superior, as far as the flavor and fragrance of their juice is concerned, to those produced on the opposite side of the mountain; nor that, in general, a hotter and stronger wine is produced in warm regions than in such as are cold or temperate. If we add to this, that the peculiar nature of the soil, its constituents, the influx and drainage of water, the lightness or stiffness of the ground in which the roots spread; that further, the dryness or dampness of the air, and the change or equality of temperature, exercise a well-known influence upon plants and the fruits produced by them, we shall at least have a general idea of the varieties of the juice which constitutes the principal element in these berry-bearing fruits.—*Professor Mulder on the Vine*.

WHY WHITETHORN IS QUICK.—The best answer to this question is, I think, one given by a

facetious botanical friend, whom I will designate "Treverbin," who, on being asked why Whitethorn was called "Quick," answered, "I believe because Blackthorn is called 'Sloe.'"—*J. T. B.*

MR. CUTBUSH'S PRIZE FOR DIOSCOREA at the *Horticultural Society's Exhibition, St. James's Hall*.—I fear that some misunderstanding has arisen regarding the prize I offer for 20 Dioscorea Batatas. I distinctly stated that it should be given for the best 20 roots from sets not weighing more than 1 oz., and planted in the spring of 1858. I have heard that several parties intend to put in competition roots from sets planted the year previous; if allowed to do so my object will be entirely defeated. Do we plant Potatoes, Carrots, Parsnips, or any other like vegetable to remain two years before being dug up for use? I want to have practical illustrations of my theory that this Yam will do in almost all soils, provided there is sufficient depth. My experience is that wherever Carrots succeed the Yam will also thrive, and I am sure that it would be a profitable crop. All we have to do is to convince the public that it is a first-class vegetable, and create a demand for it; but I invariably find more difficulty in persuading people to purchase anything new in the culinary department, than in any other branch of our business.—*James Cutbush, Highgate Nurseries, Nov. 2.*

HOW TO SAVE LEAVES IN WINTER.—Sweep them up when dry. Keep the Oak leaves by themselves if you can; for they don't make such good leaf-mould as others. Burn Fir leaves. Keep the leaves as dry as you can by packing them close in dry weather against your pits, if you want the leaves to keep frost out; and put over them a sloping roof of mats or old boards, or something of that kind. So managed, they will keep off very bad cold. If they get very wet they are not of much use. If you don't want them for pits, put them into a shed. You may get some early Seakale or Rhubarb by burying the old roots among dry leaves. When the winter is over and you want a little bottom-heat for your frames, leaves are useful for mixing with stable litter. Half and half is not too much. A Cucumber bed made up so will give a nice mild heat. What leaves you don't want for this should be thrown up out of doors for the summer, to take their chance, and by the autumn all except the Oak leaves will be crumbled to powder, and make famous leaf-mould. But they should be turned over two or three times during the summer.

MUCK AND PEAT—*Prof. Johnson's forthcoming Report*.—It is known to our readers, says the Homestead, that Professor Johnson has been employed in the examination of the mucks, peats, and swamp deposits of our State. We have been publishing from time to time such of his results as he has deemed desirable to furnish, to awaken interest and secure the attention of farmers to their own advantages, which might otherwise have been neglected. A large number of peats, etc., have been examined, and now he is ready to make up his report to the State Society.

COAL AND IRON have been formed, according to the most modern ideas of science, thus:—as the earth's crust cooled down from its state of incandescence, incalculable quantities of free oxygen must have been withdrawn from the air, and imprisoned in the oxydization of its mineral elements, with a force which no subsequent natural agency, at any rate upon a large scale, has been able to loosen. The vegetation which supervened, stimulated to high luxuriance by the fine bottom heat and reeking atmosphere of those times, began to repair this loss by decomposing the carbonic acid of the air, and thus increasing the relative amount of its oxygen. Thus the beds of iron ore and of coal, which accompany and overlies each other on the earth's wind, have withdrawn from the original atmosphere, the one a portion of its oxygen, the other a portion of its carbonic acid. When we would obtain the former in its primitive and useful state, we mingle the ore with the coal, and drive off the oxygen, surcharged with carbon, again into the air from which both originally came, by the aid of the heat which the vegetables that gathered the carbon had absorbed from the sun's rays. The idea that plants absorb light and

heat—a true force, from the sun, as well as that they constitute a deoxydizing apparatus, reducing the oxydized products of animal life—is claimed by Dumas and Boussingault. The latter promulgated the opinion that plants absorb light and caloric, only so lately as in the year 1837.

It is now a familiar fact, that plants are the great, the sole, producers of animal life. They alone convert the materials furnished chiefly by the atmosphere; they *condense air* into organized matter. While plants thus produce on such a grand scale, they consume or destroy comparatively little. Even when they do consume their own products, it is not in the mere vegetation, but in the accomplishment of some special results, chiefly in flowering. They often seem to *consume*, when they only *transform* and *transfer*. When they apparently consume the nutritive matter accumulated in the root of the Carrot, for instance, or the tuber of a potato, they in fact transform it, for the most part, into branches, foliage, and flowers. Animals *consume* what vegetables *produce*. When the farmers along our sterile coast manure their exhausted lands with fish, they merely reclaim their own and bring back to the soil what has been washed into the sea. The earthly portion of the animal's bones, and the iron in his blood, are equally drawn ready formed from the earthly constituents of the vegetables upon which he feeds. The animal merely accumulates these materials, changing them, it may be, little by little, as he destroys them, but giving them all back, finally, to the earth and air. Literally, then, "all flesh is grass." The wants of the animal kingdom were all prospectively provided for, when to them was "given every green herb for meat." One of the modes of fishing in China, according to Mr. Fortune, is curious; the men wade into the water, and strike a harp below upon the surface with their hands. This frightens the fish, which dive into the mud, and the moment the Chinaman feels one touch his feet, he himself dives also, and soon reappears holding up his prey with an air of triumph.

Correspondence.

Our London Correspondence.

MR. EDITOR.—The gardeners of America should be interested in what is transpiring here, as well as in their own country. True, the climate is somewhat different, and practice has to vary accordingly; but it is also true that the efforts to procure new plants from all parts of the world, aided, as they are, by the steam marine of this country, often present us with novelties that your gardens should possess; and there is a great amount of intelligence and capital engaged in horticultural pursuits. In fruit culture and an extended knowledge on that topic, the people here may learn of you. So, while an interchange of knowledge is going on, a note now and then may not be unacceptable to *your* readers. The *Horticulturist* is sprinkled about among our amateurs, and is much read. The American subscribers sometimes forward it to their friends, while others are regular subscribers.

Kew looks better than ever, and is wonderfully attractive to all who feel an interest in botany or gardening. The season of flower-shows at the Crystal Palace is over, but these exhibitions have been among the most attractive and profitable to the Company, while their large premiums have stimulated rivalry, and enriched the successful competitors. The Palace company is not pecuniarily successful, but there is a pride felt in its results that will keep it going.

It is not a little remarkable, that while the palace does not pay, another company has issued a prospectus for a second, to be placed where it will be more accessible to the great body of Londoners.

The Messrs. Henderson, at St. John's Wood, have recently received many new camellias from China, and great interest is felt for the novelties expected to be found among them when they

bloom. These gentlemen are especially successful in the cultivation of *Lapegeria rosea*, which I do not remember to have observed frequently in America; they plant them in a mixture of rough pieces of turfy loam, peat, leaf mould and sand, when they throw out shoots like asparagus, rejoicing in warmth, and very vigorous. *Mandevilla suaveolens*, planted in a border with a south aspect, becomes a lovely climber; here it requires only the protection of a little dry hay and a mat during winter, if the soil is drained. The *Gardenia citriodora* is proving very valuable, and the mules or crosses between *Gloxinias* and *Gesneras*, are attracting attention.

It may be new to some of your readers to learn that strawberries are readily produced from cuttings. A gardener having prevented his forced plants from throwing out runners, shook them out of their pots, and divided the crowns, making two, and sometimes three cuttings of one old plant. The roots were pruned away, and the old leaves also, and each cutting was put into a small 6's pot, in leaf soil and loam, placed in a frame, and kept close for a week; they soon commenced to grow when more air was given. In three weeks they were fully exposed, having then filled the pots with young roots, when they were planted in fruiting-pots, and are now in no way inferior to plants from layers. The strawberry may be propagated in this manner when desirable. Vilmorin, of Paris, has just sent out a new strawberry catalogue of new and old kinds; the whole comprises 74 sorts. For forcing he recommends Myatt's, Queen Victoria, Black Prince, Princess Royal, Sir Harry, and Keen's Seedling; among others, not for forcing, he recommends Elton Pine, British Queen, Omar Pacha, Kitley's Goliath, and Nimrod.

We have a novelty in a Lattice plant, the *Bernieriana*, differing somewhat from the *Fenestralis*, chiefly in the leaves being larger (from one and a half to two feet) and narrower in proportion; the reticulation being smaller and the color a brighter green. It is from Madagascar. The Horse Chesnut of California, *Æsculus Californica*, is attracting attention. It is very ornamental, and if hardy will prove an acquisition to the shrubbery; the leaves are smaller than the old kind, and the blossoms more numerous; in dense spikes, greenish white. The beautiful *Datura Wrightii*, with its enormous flower, white shading into lilac, is a great favorite, and *Clematis lanuginosa* is much employed.

One of our best conducted London papers estimates the refuse of London is worth ten millions of dollars a year, but the state of dilution in which it exists is a bar to its extended use; more the pity, for while we go to the great expense of importing guano, an equally valuable fertilizer is thrown away. Efforts are however making to retain the refuse of certain factories, slaughter houses &c., and to make it into artificial manures, on whose strength the chemists keep a bright lookout.

We are here much in the same condition with regard to the Chinese Yam as yourselves. There are many who think well of it, and probably I may soon report it as a success.

You will probably see in the English Journals an account of some enormous Perry pear trees, but lest you should not, I copy it as follows:—

In one orchard there are now growing 10 sound Perry Pear trees, whose average circumference three years ago, at between 2 and 3 feet from the ground and below the graft, was 9 feet 4½ inches, but taking the three largest trees separately, above 11 feet; the circumference of the largest tree was 11 feet 3 inches, that of the smallest (of the whole number), 7 feet 4 inches, and they are all of them of the very fullest height and span, the span of the largest 60 feet. A few years ago the largest branches of the largest trees, for a sadly fallacious reason, were cut off, before which unjust treatment they produced an average crop of a ton of Pears of the noble kind called Huffcap, the flavor of which, though rough and wild, is full of fine aroma; but one of them, and not the largest tree, is known to have yielded in one season 2 wagon loads=20 sacks=100 bushels=2 tons=4 hogsheds of Perry Pears."

Steam plows are the talk in Agricultural circles, and are considered moderately successful. We rather look for their improvement to come from America.

I sent from Paris a box of French pears, which I trust arrived in good order. [Yes, in the main, though one third were decayed. They were large and fine, some specimens especially. ED.] You would scarcely know Paris; the last few years have produced an immense change. The Bois de Boulogne, extending from the Triumphal Arch five miles, is wonderfully remodelled and embellished, and is well kept; it may be considered, notwithstanding its want of large trees, the most ornamental piece of ground in Europe for its size. There is a mass of artificial rock-work on a gigantic scale; the rocks were taken from Fontainebleau, are of immense size, and most artistically put together. The grounds contain a good piece of water, but the banks want boldness. The climate here is more favorable to bedding-out plants than that of England, and the gardeners do certainly understand how to blend colors; their plats are a blaze of glory. You will be surprised to see the asparagus plant used for ornament; but so it is: they plant it quite young, between rows of bulbs, and the feathery spray of the grass forms a bottom to the beds, and hides the long stems of the flowers, besides forming a good contrast. I wish you could see some of the new orangeries erected here lately, especially that of Baron Rothschild at Suresnes near Boulogne; where he has magnificent gardens, and the finest "ribbons," without the formality of the English. One border had an ivy edging 12 inches wide; next a row of Phlox Drummondii pegged down; next white petunias; then scarlet geranium, followed by the orange *erysinum* and white *chrysanthemum*, backed by blue *salvias* and *gladiolus*, which formed the centre of the bed.

I shall occasionally drop you a letter, and am as ever, yours,

HORTULANUS.

London, December, 1858.

PEARS.—As to the article page 541, of December, let me remark that: Mr. Morton seems not to well understand the planting of Dwarfs; the remark page 542, where "Mr. Menaud thinks well of Dwarfs if planted deeply," seems to imply it.

Page 543, Rev. D. Ide asks "Why not plant year stock alone, instead of waiting for the throwing out of *artificial* roots above the quince stock?" Why? because the natural pear stock from wild seed will take from 10 to 25 years to come into bearing. It is a completely organized tree, with the embryo of all its constitutive parts contained in itself, while the *affraenti*, or artificially rooted *branch*, is deficient in the laws of the true constitution of the wild tree, and is only an artificial product, and, as such, more disposed to bear or mature than the perfectly organized tree, from the hands of nature, that is, from the embryo of the seed.

That we can not have all things combined to our satisfaction and to our views of accommodation and perfection, is an old truth which applies as well to men as to pear trees.

He then, who will have his trees of strength to withstand *hurricanes*, the quality of bearing "20 or 40 bunches," may and must plant trees grafted on the wildest stock, and may have to wait for the products some dozen years or two. I know of some seedlings which yielded their first crops the 32d year after they were planted as a pit or seed. The more vigorous they are, the more will the maturity or *virility* of the tree be retarded. Take your choice then. "Wait or labor." Wait and let the *stock* alone; attend and nurse the artificial being, from which you expect products that you never ought to see during your life time from the first.

After all the "pour et contre" of the question, it seems to be a fair conclusion to assign to the quince stock a certain latitude, and certain atmospheric and humeric conditions, outside which, as so many other plants, *it must be a partial or total failure*. Twenty or thirty degrees below zero is too low a temperature for many, otherwise hardy, exotic plants.

If standards would only bear in ten or twelve years from the graft, and if I were younger and certain to live forever on the same spot of ground, I would plant more Standards, but in this country a man has hardly time to plant a tree. To tell him to wait 20 years for a crop would make him laugh. The time is no more when the Huguenots, and the First Settlers of Jersey and Pennsylvania, considered the land of refuge as their permanent home, and planted orchards

for their grand children; no body seems to care now to plant Apple orchards, and if the quince had not interfered with the planting of pears, perhaps we should not have as many pear trees as we have English walnuts or French chestnut trees in our middle States.—L. E. B.

LEWIS F. ALLEN and the Pear Controversy. In the February number we shall publish Mr. Allen's reply on this subject. The public will arrive at the truth in the end, and hence the value of free discussion.

A FEW weeks ago, says a correspondent, "I visited Newburg and Iona, with a view to satisfy myself as to the real merits of the Delaware grape vine; as to its fruit, most of us agree that it is the best American grape we have; but its feeble growth has been a serious drawback. All this arises from an erroneous system of propagation. In the vicinity of Newburg I found the Delaware in every instance a strong grower, and great bearer, single vines there growing into three years, with fifty square feet of trellis covered, and bearing from fifty to one hundred bunches, and such bunches! the figure in the book is but a poor representation. At Dr. Grant's, on the Island of Iona near Peekskill, with whom I spent a very pleasant day and night, I found the Delaware even still more vigorous, if possible;—vines three years old, with three, four and as many as six shoots to a vine, that it would take a ten foot pole to reach to the top; stout, short-jointed wood. There were also 48 or 50 vines which Dr. Grant had procured somewhere, of an age similar to those of his own growing, side by side; one vine of his had as much young wood upon it as the whole 50 of the others. Such vines as those 50 above mentioned are the kind we have been treated to, to the tune of \$3 and \$5, which accounts for the complaint about its feeble growth, and whenever I heard it discussed, my voice was against it. I would rather pay \$5 per vine such as I then saw, than to plant such as usually were sent out, if given to me.

The Diana has done splendidly there also,—such tremendous growths, and such large compact bunches of luscious fruit,—the berries as large as Catawba.

The Anna Grape was there in perfection, large as Catawba, white and of extraordinary beauty, with an aroma that will not soon be equalled in an American Grape. Hardy, and a good grower; quality very good. The everbearing Mulberry is also to be seen there in all its glory, growing more like reeds than a shoot of a tree; growths 15 feet of the present season, with beautiful foliage; would make an ornamental shade tree independent of its fruit, which is excellent, and which was in eating 10 weeks this season; I ate of them on the last day of August, and never tasted a better mulberry.

Should you think proper to give this a place in the *Horticulturist*, it may do something to revive the grape spirit in regard to the Delaware, which was really falling into disrepute in many places, on account of its feeble growth. The whole mystery lays in starting with healthy, vigorous plants, if you wish to succeed.

P.S.—On the 15th day of September, I brought with me from Iona ripe Dianas and Delawares. The Anna almost ripe, also.—S. M., *Calmdale*."

CHICAGO, ILLINOIS.—Mr. Editor:—In June, 1857, I built a small vinery for the Hon. J. N. Arnold of this place. It being the 23th of May when we commenced, there were doubts as to the canes ripening so as to withstand our changeable winters, as there is more to fear from sudden changes than severity of frost. It was a lean-to, covering the south side of the barn or carriage house. We have excellent drainage and soil. In making the border we covered the surface with 18 inches of prairie loam and cow manure, 10 bushels of bone-dust from a button factory, two barrels of leached ashes and lime from a soap and candle factory, and applied soap-suds in the summer while the vines were in a growing state. The size of the house is 24 by 14, and 14 feet in height at the back, with 6 feet in front. The front sashes are hung on hinges at the top for ventilation. Mr. Arnold was so well pleased with the growth in this small vinery, that he has erected a larger. I have taken, as you will see by Emery's Journal, the first premium for samples of cold vinery grapes grown on plants two years old. They

were in competition with grapes from older vines and more costly structures. My calculation in the same Journal of the profits of grape growing, is as follows:

DR.

Cost of grapery and border.....	\$100
Interest two years.....	20
Attention during two seasons of one hour each day at \$2 per day.....	72
Ten per cent. per annum on the cost of the house for wear and decay.....	20
Cost of vines and expressage—24 vines at 50 cents....	12
Rent of ground.....	2
Manures.....	5
Tools, including syringe, cords, &c.....	4
Total.....	\$235

CR.

250 pounds grapes, at Chicago prices, \$2 per lb.....	\$500
Profit.....	\$265

We fruited twelve of the vines, and have the other twelve ready for a heavy crop next year. In my estimate, I have given more than the actual cost to the present time, and now have my vines, two years old next June, and the house left for future profit, besides the \$265 in cash, which might easily have been obtained as profit on the fruit, and the real pleasure which grows out of the cultivation of such fruit.

The varieties fruited were the Old Black Hamburg, Golden Chasselas, Chasselas Musque, Muscat of Alexandria, Wilmot's Black Hamburg, Royal Muscadine, Black Prince, Grizzly Frontignac, Zinfindale, and a few other varieties. Of these the Zinfindale and Black Hamburg fruited heaviest. The vines, obtained of Ellwanger and Barry, Rochester, New York, proved true to name and came in excellent order. Is the reader satisfied as to the profit of graperies?

There are only eleven vineries in Chicago, but several are going up this winter. I recommend fruiting the second year, and it will pay, as it is very difficult to get gentlemen to wait three or four years. I prefer planting double thick, fruiting half of these, and then cut out those that have fruited heavily.—J. C. URE.

NEW REMEDY.—At a late meeting of the Academy of Sciences at Paris, M. Millot-Brule exhibited a black powder, obtained from a purely natural substance, which, should it come into general use, will gladden the hearts of gardeners. If you have a plant or shrub that you wish to preserve from noxious creeping things, you draw round it a circle of this black powder, and not a snail, or slug, or worm, or maggot, will attack it; for no sooner do they touch the black powder than they are thrown into convulsions, which speedily kill them off. A whole bed or plot may be sprinkled with it, and with the like results, and without injury to the garden. On the contrary, the powder is a good fertilizer. It is said to be a specific against the grape disease, and if blown lightly into an affected bunch, the *oidium* or fungus is seen to curl up and perish—killed as surely as the snails.

The composition of the powder is no secret; it is nothing but a species of lignite—sulphur-coal, as the Germans call it—ground fine. Large beds of it exist in many parts of the continent. Ardennes abounds with it; and it was with lumps dug from that region that M. Millot-Brule made his experiments. It is found in extensive deposits at Oppelsdorff, near Zittau in Saxony, where for some years past it has been turned to account for the preservation of timber. The sulphur-coal, to give it the local name, is reduced to powder, and made into a bath with water. The wood to be treated is plunged into this bath, and left there for a time without any mechanical pressure, until it has undergone a change which partakes of the nature of mineralization. Mere contact with the lignite appears to suffice; and we are told that beams which have been used in the works for thirty years, are sounder and more likely to last now, than when

first put up. In Saxony, the railroad sleepers are prepared with this substance, and with manifest advantage. Would it not do well for ship-timbers, docks, and water-side constructions generally?

SAMPSON.

HOW CAN PAINT BE REMOVED FROM BRICK WALLS!—*Mr. Editor* :—I have a brick house, which has for forty or fifty years been covered, at intervals, with a succession of coats of lead paint of different shades of color.

If any reader can tell how to remove it, and leave the bricks bare in good condition, as they were before the paint was first applied, and will give the information by a few lines in the *Horticulturist*, he will probably oblige others beside the present writer.

O.

To the Editor of the Horticulturist.—*Dear Sir* :—I was happy to notice in the October number of the *Horticulturist*, the proceedings of the Pomological Convention, held in New York in September last; and that under the head of grapes, the Hartford Prolific Grape was discussed so generally, and was put on the list of those promising well. Think if it had gone on the list of general cultivation, it would have had no more than it deserves. It has been the best grape I have raised for a number of years; ripens two weeks earlier than the Concord, and for this reason, if no other, should be on for general cultivation. And then it is more prolific, and for flavor, equal, if not superior, to the Concord. I trust, ere long, we shall see it receiving the attention it merits.

Yours,

Springfield, Oct. 10, 1858.

A FRIEND OF THE HORTICULTURIST.

J. J. SMITH, ESQ.—Numerous paragraphs about lawns in your journal, invariably recommend "Dutch clover;" this may be very good if you are sure of getting the true seed. My experience would caution lawn makers to beware!

Three years ago, I operated for a lawn, (*secundem artem*) which I suppose means after the best and most current notions. With blue grass, red top, and Vernal grass, I sowed Dutch clover. The result is an eye-sore, an abomination, and a constant annoyance. The "Dutch clover" you commonly get at the shops is "Lucerne," a rank grower, and on a lawn a perfect weed, making six inches growth while other grasses make one. "Swift's Lawn Cutter," a capital tool by the way, wont touch it; and nothing answers but the scythe, which is no small job for a four acre field or plot.

Brother rurals, keep "Dutch clover" out of your lawns. Our native white clover is indigenous, comes of itself, and is a thousand times preferable to your "Dutch clover."

Canandaigua, N. Y.

HOMESPUN.

BAGLEY'S PERPETUAL RASPBERRIES.—This variety, originating in New Haven, Conn., has been cultivated four years, and has proved itself one of the best raspberries for market and private gardens. It is perfectly hardy, and needs no protection during the winter. The stalks are about four feet high, and form a beautiful branching bush that supports itself, and needs no stakes or training, and is entirely smooth, and free from pricklers. The old stalks bear a bountiful crop of delicious fruit during the month of July, when the new canes commence bearing, and continue to bear until frost; the same stalk bears another crop the following year. The flavor of the berries is as racy as that of wild raspberries, and the variety, on this account as well as for its hardiness, has rapidly come into favor. It may be procured at Bridgeman's, No. 876 Broadway, New York.

JEUNESSE.

WARMING A FORCING-HOUSE.—In reference to the plan in the last number, we are enabled to present the following testimony from a distinguished source:

MR. DANIEL BARKER :—You ask my opinion of your plan for warming a forcing-house. It is with great pleasure that I can conscientiously give you a favorable opinion. Your plan is very simple, convenient, and seemed economical, and it was certainly very successful. Your location was much exposed to our cold westerly winds, yet I remember that you had encumbers large enough to cut for table use, on the first of March, and that the vines, as well as your young

melon plants, tomatoes, (then large and setting for fruit,) strawberry plants, and young grape vines, all appeared remarkably luxuriant and healthful. I have never seen elsewhere than in your forcing-house, the last of March so successfully changed into the middle of June.

Utica, N. Y.

Yours truly, D. S. HEFFRON.

MR. EDITOR:—The best mode of preserving fruits and such perishable commodities fresh and “as good as new” for a length of time after gathering, is a subject as yet but little understood, though of unquestionable importance. The writer has been for some time past looking for something in our Horticultural Journals, in regard to Schooley’s patent process which claims to answer the desired end perfectly.

Finding nothing in the papers, I wrote to a well-known eastern Horticulturist who has tried that process for two seasons or more. From his reply we give the following extract, *hoping it may call out further information.*

“The only difficulty with Schooley’s process is the waste of ice, so that when the warm days of October and November arrive we are generally without it.

“If we can carry our fruits through the warm days, there is no difficulty in keeping them through the succeeding months. My ice lasts until October 1, and the room is a real luxury to the family. Strawberries keep well for several days, and I have kept them for three weeks tolerably perfect. Other fruit, such as peaches, plums, nectarines, pears, keep (in the hottest weather) 15 to 20 days.

“There is no danger of cold from the ice, the mercury never falling below 34° with me until winter weather, when I remove my fruits to the fruit room in the house, a room in the north-east corner of my cellar, with insulated walls.

“As to draught, this must be regulated by the ventilator in the door or wall.” On another subject he adds: “Pears are very high in this market. They command \$25 per barrel for fair quality. I have known a peck of B. Bosc sold for \$7, and a bag of B. Diel for \$10.”

Bloomington Nursery, Illinois.

F. K. PHOENIX.

MY DEAR SIR:—I send herewith some White Apples unnamed, received in a box of vines from Mr. Samuel Miller, who requested I should transmit them to you (excellent; Editor).

Mr. Miller sends me very fine layers of Dr. Grant’s new vine, the Anna; also of Louisa, Emily, Mary Ann, and Clapier; from Mr. Read I have splendid layers of Canada Chief, B. Hamburg, and Secord’s Sweetwater; and from Dr. Grant equally fine ones of To Kalon, Anna, Rebecca, Delaware, Herbemont, Diana, and Concord. I hope to give you a taste of some or all, next season, grown on my own well-prepared ground.

H.

EDITOR HORTICULTURIST:—The following remarks though, they have appeared before in a newspaper, are applicable to all sections of the country, while perhaps the fruits named may succeed best in Eastern Pennsylvania and similar climates. The subject brought before the Pomological Society by S. Walker, at its last session, with respect to having local lists suitable to different states and sections, will eventually force itself upon the attention of all intelligent cultivators, who will find by experience the list of fruits “recommended for general cultivation,” will have to be taken with many cases of exception in regard to the several localities of our great country; for while there may be many that seem to do well in nearly all situations, there are others that do not answer the expectations formed of them by seeing them thus recommended.

Respectfully

Jenkintown, Penn.

SAMUEL W. NOBLE.

VARIETIES OF FRUIT.—As the period for planting fruit trees will soon be here, a few words on the subject of varieties might be proper at this time; for no matter how well the ground may be prepared, how well the planting may be performed, or how well the trees are cultivated and attended to afterward, if the varieties selected are not suited to the locality or soil, the planter’s expectations will be likely to be disappointed when the trees come to fruit.

With regard to the varieties suited to each locality, I may say, after all that has been recom-

mended by pomological societies and others, there is no certain guide but experience. Hence, each one intending to plant should look in his own locality and neighborhood, and see what varieties succeed there, and plant principally of those varieties;—or if he wishes a larger variety, plant a few of those recommended by friends and others by way of experiment; if they succeed, he has gained something for himself and others; if they fail, his experience will be of value to his neighbors if not to himself. As a case in point of planting without local experience, it was stated at the last Pomological convention in New York, by a member from a Western State, that his section had sustained great loss by planting apple trees of varieties recommended by the Pomological Society, that were chiefly of Northern or Eastern origin, naming five or six considered in the North and East as their best apples, as having failed to do well West. An apple that has originated in a certain locality and is found to suit in quality, time of ripening and bearing properties, forces itself as it were into notice, and is extensively planted; but if the same apple had originated in another section, it would never have attained the popularity it has in its native locality, because the time of ripening, its keeping, and very likely other properties which made it valuable where it originated, would be changed. For instance, the Baldwin and New England Russet are the best and most popular apples in New England, much valued for their long keeping. Now, if they had originated in Virginia, they never would have been much planted for their keeping qualities, for they are there a fall or early winter variety. So with those of Southern origin, as the Raul's Jennet and others; if they had originated in the North, they would not have been propagated, because they do not come to perfection there. Hence, if we want apples that will do well here, we must look principally to those varieties that belong to this section of country. Among the apples originated in Eastern Pennsylvania, and found to do well here, may be named the *Townsend* origin Bucks county, a good-sized striped apple, ripens late in summer; *Calf Pasture*, by some called *Seek-no-Farther*—but not the *Rambo*, which also goes under that name—a great bearer, and a good apple, ripens in early autumn; *Cornell's Fancy*, a very valuable apple, tree upright and of good growth, one of the best of its season; mid autumn;—*Smith's Cider*, which originated near Wrightstown, Bucks county; it was a chance seedling that came up in the woods on the property of one of the Smiths, and has for the last forty years been the most popular variety in Bucks county; an early and abundant bearer, and is well known in this section and should constitute one of the principal standard varieties in setting out an orchard here. A friend who planted an orchard of one hundred and fifty apple trees of selected fruit, about thirty-five or forty years ago, stated that he thought the twenty trees he planted of this variety had produced one-third of all the apples that grew in the orchard since it was planted. The *Fornvalder*, the *Princely*, and the *Smokehouse*, also do well here. There is one variety said to have originated in Virginia, and extensively planted out West, which appears, as far as tested, to do well here; that is, *Raul's Jennet* or *Neverfail*; the latter name has been given from the circumstance of the tree not putting out or blossoming until eight or ten days after the general blossoming of other varieties; hence the fruit often escapes being injured by the late frosts; it is a very productive and good keeping variety; and is *very valuable* in a season like the past one, when there has been nearly a total failure of apples of this variety, judging from the young trees that I have of this kind which are just coming into bearing, would have produced a crop, when all others blooming before this variety were cut off by the frost. The *Ridge Pippin* and *Cooper's Redling* are also valuable for their late keeping.

It is better, particularly for market purposes, to plant a few varieties of good bearing trees, ripening in succession, of fair quality, than a large number of fancy kinds, which perhaps are very good, but are not reliable. What I desire in the above remarks, is, to impress it on planters not to be too much taken by foreign fruits, with long names and captivating titles, which are often pushed into notice by interested parties and tree pedlars; and overlook those of home origin which are reliable.

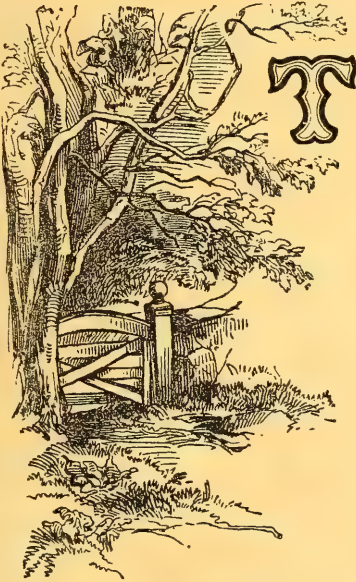


CLARA

Vitis rotundifolia

Ages of Trees.

CONDENSED FROM AN ARTICLE BY PROFESSOR ASA GRAY.



T

HE celebrated Sycamore-maple, *Acer Pseudo-Platanus*, stands near the entrance of the village of Trons, in the Grisons, the cradle of liberty in the Rhœtian Alps; under the once spreading branches of this now hollow and cloven trunk, the Gray League was solemnly ratified in 1424. Upon the supposition that it was only a century old when the meeting to which its celebrity is owing, took place,—and a younger tree would hardly be selected for the purpose,—it has now attained the age of 533 years. It can scarcely be younger, it may be much older than this. In some of the earlier accounts, this tree is said to be a Linden; they were better patriots than botanists in those days, for the investigations of Colonel Bontemps leave no doubt as to the identity of the tree.

The Linden in the town of Friburg, which was planted in 1476 to commemorate the bloody battle of Morât, though now beginning to decay, has already proved a more durable memorial than the famous ossuary of the battle field,

“Where Burgundy bequeathed his tombless host
A bony heap through ages to remain,
Themselves their monument;—”

and may even outlast the obelisk recently erected upon its site. The age of this tree and the girth of its trunk being well known,—having attained the circumference of fourteen English feet in 364 years,—it has been employed as a standard of comparison, in computing the age of larger and more venerable trunks of the same species. Such a tree is still standing near the town of Morât in full vigor, although portions of its bark are known to have been stripped off about the time of the battle in 1476, when it was already a noted tree. At four feet above the ground the trunk has a circumference of thirty-eight English feet, and consequently a diameter of about twelve feet; supposing it to have grown a little more rapidly than the Friburg Linden, which may be deemed a safe estimate when we recollect that old trees grow much more slowly than younger ones,—supposing it to have increased in diameter at the average rate of one-sixth of an inch in a year, it must have been 864 years old at the time the measurement was made in 1831. It is not probable that this estimate materially exaggerates the age of the tree, even supposing the Linden at Friburg to have grown at less than the average rate of the species. It is nearly corroborated, indeed,

by the more celebrated Linden at Neustadt on the Kocher, in Wurtemberg, whose age rests wholly on historic evidence. Evelyn, it will be remembered, mentions it, and Trembly visited it in 1831, at the instance of the illustrious De Candolle. It was already remarkable early in the 13th century, for documents prove that the village of Helmbundt having been destroyed in 1226, was rebuilt three years afterwards, at some distance from its former site, in the vicinity of this tree, and took the name of *Neustadt an der grossen Linden*. An old poem of 1408 informs us that "before the gate rises a Linden, whose branches are sustained by 67 columns." The number of these columns, or pillars of stone, raised to support the heavy and widely spreading branches, one of which extends horizontally for more than a hundred feet, had increased to 82 when the tree was visited by Evelyn, and to 106 when examined by Trembly. To these supports, doubtless, its preservation is chiefly owing. They are nearly covered with inscriptions, of which the most ancient in Evelyn's time bore the date of 1551, but the oldest now legible is dated 1558. At five or six feet from the ground the tree is $35\frac{1}{2}$ English feet in circumference. If, therefore, it has grown at the actual rate of the Friburg Linden, it must have reached its thousandth anniversary; or if we allow a sixth of an inch per annum its age would be a little over 800 years; surely, a moderate estimate for a tree which was called the Great Linden more than six centuries ago.

The famous Chestnut in Sicily, according to Brydone, who visited it in 1770, had trunks, for it had then the appearance of five distinct trees, measuring 204 feet in circumference; but later and more trustworthy observers reduce these dimensions to 185 feet. A hut has been erected in the hollow space, with an oven, in which the inhabitants dry the chestnuts, and other fruits, using at times, for fuel, pieces cut with a hatchet from the interior of the tree. The separation of a large hollow trunk into independent portions, appearing like the remains of as many distinct trees, is not in itself improbable, but it is probable that these present trunks were offshoots from a more ancient stem.

Mount Ætna has some colossal chestnuts with undoubtedly single trunks, three of which recently measured are found to have a circumference respectively of 57, 64, and 70 feet.

But the Oak, the emblem of embodied strength, and one of the longest-lived, as it is the slowest growing of deciduous forest trees,

"Lord of the wood, the long-surviving Oak,"

has been most observed. Among the oldest specimens now extant in England are to be enumerated the "Parliament Oak," in Clipstone Park, supposed to be the oldest Park in England; this tree derives its name from a Parliament having been held under it by Edward the First, in 1290; the "Cowthorpe Oak" in Yorkshire, the trunk of which measures 78 feet in circumference near the ground, and whose age is estimated as nearly cœval with the Christian era; another in Northamptonshire, the Salcey Forest Oak, is perhaps of equal antiquity. A tree at Bordza, felled some forty years ago, was proved by its annual layers to have been about 1000 years old; this was a goodly oak, but it shrinks into insignificance when compared with one in the south of France, which, according to an account in Professor Lindley's *Gardener's Chronicle*, whose trunk has a circumference from 85 to 94 feet; at the height of a man, from 60 to 67 feet. The diameter of the whole head,

from 40 to 43 yards; the height of the trunk 8 yards; the general height of the tree 22 yards. Upon a plate of wood taken from the trunk about the height of the door of the room hollowed into it, 200 annual rings have been counted, whence it results, in taking a horizontal radius from the exterior circumference to the centre of the oak, that there must have been from 1,800 to 2,000 of these rings; which makes its age nearly 2000 years.

Rich although North America is, above all other parts of the world, in different species of oak, it would not be difficult to explain why we cannot boast such venerable trees,

"Whose boughs are mossed with age,
And high tops bald with dry antiquity."

It is chiefly that in clearing away the forest which so recently covered the soil, "men were famous according as they had lifted up axes upon the thick trees." The close, stifling growth of our primeval forests, like the democratic institutions which they seem to foreshadow, although favorable to mediocrity, forbids preëminence. "A chilly, cheerless, everlasting shade," prevents the fullest individual development; and even if the woodman's axe had spared the older trees, their high-drawn trunks, no longer shielded by the dense ray of their brethren, were sure to be overthrown by the winds. Had the aboriginal inhabitants been tillers of the ground, our White Oaks had long since spread their broad arms, and emulated their more renowned brethren in the Parks of England. The "Wadsworth Oak" may claim a higher antiquity, and the "Charter Oak" of Hartford was probably only a sapling at the first settlement of our country. Bartram measured a Live Oak from 12 to 18 feet in girth, and mentions "some of 18 or 20, each limb forming a gentle curve from its base to its extremity. I have stepped" he says, "above 50 paces, on a straight line, from the trunk of one to the extremity of the limbs."

Michaux mentions a tree felled near Charleston, whose trunk was 24 feet in circumference. The Olive grows more slowly than the Oak; one mentioned by De Candolle had a trunk 24 feet in girth, and was believed to be 700 years old; another 1000 years. Upon the Mount of Olives there is said to be still living eight venerable specimens of the Olive, which may have been in existence, as tradition asserts, at the time of our Saviour's passion.

A Cypress tree at Somna, in Lombardy, figured by Loudon, according to tradition was planted in the year of our Saviour's birth. Even Napoleon deviated from a direct line to avoid injuring it, when laying down the plan of the great road over the Simplon. Its trunk was 20 feet in girth in 1832. There is an ancient chronicle at Milan which proves this tree to have been in existence in the time of Julius Cæsar!

When Prince de Joinville visited Mount Lebanon in 1836, one of his officers stated that all but one of the sixteen old Cedars mentioned by Maundrell are still alive, although in a decaying state; and that one of the healthiest, but perhaps the smallest trunks, measured 36 English feet in circumference, but he does not say at what height. De Candolle deems the trees to have been nearly 900 years old. This estimate may fall considerably below the truth, but our present knowledge will not warrant the assumption of a higher one. Doubtless this remarkable forest has existed from primeval times, while the oldest individuals, from age to age, have decayed and disappeared.

Of the yews at Fountains Abbey, 1200 years seems a fair estimate of

their age ; that at Dryburgh 600 years ; the "Darley Yew" 1350 years ; one in Dorsetshire 1600 years ; and one long since disappeared, if the rule applied to the growth of this tree holds good, which was 2,540 years old at the time of its death. The trunk of the "Fortingal Yew" in Scotland was 52 feet in circumference in 1769, and still survives ; in all probability it was a flourishing tree at the commencement of the Christian era.

The Lambert Pine of California attains a great age ; we have calculated one mentioned by Douglass at 1,100 years. The great Cypress of Mexico at Atlisco, has a girth of 76 English feet. But this is greatly surpassed by one, the measurement of which is mentioned by Humboldt, 118 English feet in circumference. This tree has excited much interest ; our Minister, Mr. Poinsett, was requested by the American Philosophical Society to give further particulars. He transmitted a communication from Mr. Exter, an English traveler who had carefully examined the tree in question, who gives the circumference of the trunk as 122 English feet. This has been substantially confirmed since, and others are mentioned of equal size.

The "Cypress of Montezuma" may have existed for twenty-seven centuries, but 2000 years is quite within bounds. De Candolle the younger, infers that the great Cypress of Santa Maria del Tule, if really the growth of a single trunk, is from 5000 to 6000 years old ; the lowest estimate is about 4050 years ; and here, without following Dr. Gray, or touching upon the more recent discoveries of the Washingtonia in California, we close our condensed account, only adding that the Baobabs of Senegambia are esteemed to be 5000 or 6000 years old. Its roots have been traced to a distance of more than a 100 feet without reaching their extremity ; and these trees, it has been conjectured, may have been in existence several thousand years, or nearly from the period of the universal deluge, being thus the most ancient living monuments of the world ; compared with these monumental *living* trees the mouldering relics of the earliest Egyptian civilization are but structures of yesterday.

FAST GROWING SHADE TREES.

BY A PRACTICAL PLANTER.

It is often objected to us as a people, that we are too forward to make haste. We have little credit for extreme patience. Whatever we have to do, must be done at once. "The more haste the less speed," is too old foggyish for a modern proverb. It might do in the days of stage coaches, and spinning wheels, but tastes mouldy in our fastidious mouths.

Nor are we much to be blamed. Life is short, and few of us come into the world with silver spoons in our mouths, as it is said of more favored beings in other parts of the earth. If there is any enjoyment to be had by exchanging the wooden spoon for one of genuine argentine character, the sooner it is bartered away, who will not say it is all for the better ?

There is, of course, such a thing as being too fast ; of acting in haste and repenting at leisure ; but the spirit which seeks to annihilate time and space, and endeavors to compass in the limit of three score and ten the enjoyments of the fabulous term of Methusalah, is undoubtedly the correct one, says Young America.

Most of our successful men start into business life comparatively penniless. Few achieve an independence till their heads get gray; and, after securing a home in some suburb, and basking in the sun under the nineties in summer, and being frozen almost dry by the cutting winds of our arctic winters, who can wonder that such immense sums are annually wasted on "big trees" in the vicinity of all large cities? I have known as much as \$100 to be spent on the removal of a single large tree. In the hands of a skillful gardener such grand operations may, and often do, succeed well; but they are, on the whole, miserable and expensive failures. But can nothing be done to cheer our declining years with the shade and shelter our bodily wants petition for? Will not the Landscape gardener's art lower its dignity a little, and in the name of old age, bend a little to its utilitarian spirit? We can enjoy an Italian landscape, in a splendid picture—feast the eye on the delicacies of light and shade in some Swiss mountain; or pity the poor "Laplanders of the North," while enjoying the pleasures of a winter in the Antilles. But *our* heat, and *our* cold! Can we enjoy the sight of an iceberg while roasting, and not be allowed to come within the influence of the frigid luxury? or freezing, feel any pleasure in the sight of a distant fire we may not approach? Then, gentlemen, shade us—shelter and shade us—you may then give us Chatsworth, or Versailles, or anything you please, superior to any of them all.

A little more attention to *fast growing trees*—and no lofty position of high art need be encroached on either—will do wonders for us.

Most fast growing trees have few or no other recommendations, and many have objectionable points. No one would be willing to exchange an Oak for an Abele, or a Horse Chestnut for an Ailanthus. Yet both these much abused trees are, like some people, very well in their proper places. Most beautiful trees are slow growers, and are undoubtedly, as we are told, worth waiting for; but while they are coming on, why not fill in between with any kind of quick growing trees; and, where shade and shelter is of paramount importance, if they are not thickly planted among slower growing kinds, they ought rather to constitute the entire planting, than to be absent altogether.

The *Abele* or *Silver Poplar*, is perhaps the best known of fast growing trees. It is not a desirable tree for a lawn, because of the innumerable suckers it throws up through the grass after it has reached ten or fifteen years of age; but for a street tree, where suckering can do little or no harm, there are few trees better adapted. It will grow well in any soil but a poor one,—in which indeed no street tree should be planted,—or in any situation wet or dry; though, as with all poplars, the former is preferred. Slower growing trees, as Norway Maples, American Lindens, and the various Oaks might be alternated with them, and the Poplars after some few years taken away; immediate shade would then be gained, while eventually to shade would be added beautiful forms and interesting colors.

All the Poplars are desirable for forming immediate shade or shelter. The gray Poplar, (*P. Canescens*), however, enjoys with the Abele the reputation of suckering up too freely after its few first years of vigorous growth are over, to be trusted long on the lawn. For use there, to mix with other trees till they grow, or to make rapid screens, nothing is superior to the Virginian or Swiss Poplar, (*P. Monilifera*), commonly known in our nurseries as

the "Cottonwood," and "*P. Angulata*."* It has one fault, however, that it grows too erect, approaching the Lombardy in that respect. This may, however, be somewhat remedied by shortening the top shoots while they are growing, which throws more force into the lowermost ones. I have a specimen so treated, with a head as round as a Linden. The true *P. Angulata*, or Carolinian Cottonwood, is naturally a more spreading headed tree, and nearly as fast in growth. I do not think it is in any of our nurseries however, so that the readers of this paper will not be able to avail themselves of any advantages they may possess. I believe the figure in Downing, of the "Cottonwood," accurately represents this species when full grown. Neither of the two species just described are objectionable in the way of suckering. The Balsam Poplar, (*P. Balsamea*.) is of very common occurrence, but most undeservedly so. It is a very bad suckerer, very liable to be bored "all over" with worms, and thus is very short lived.

The Aspen section are not bad for much suckering, and they have pretty round heads. They do not grow quite so fast as the Cottonwood, but are very desirable for variety. The *P. Grandidentata*, or large American Aspen, is the strongest grower; *P. Tremula*, the English, the next; and *P. Tremuloides* the weakest, though a very pretty grower.

The Willows are all very rapid growing trees, and the common weeping (*Salix Babylonica*) and the ring-leaved (*S. Bab. annularis*) well known. I am not over-fond of weeping-willows, but must admit that to most tastes they are very pleasing. Whatever beauty, however, they may possess, is certainly inside of the first fifteen years of their existence, and they may be spared without regret afterwards. The White Willow, (*Salix alba*) and the Sallow, (*S. Russelliana*) also grow rapidly to a good size; but I don't like them—they look too marshy; and two years of the "chills and fevers" in such a spot makes my teeth feel like chattering when I look at them. I can tolerate the *S. Vitellina*, for its handsome golden bark in the winter time. May I say anything in favor of the *Ailanthus*? When the worms have destroyed all the Elms and European Lindens, the borers riddled your ashes and locusts, the caterpillars denuded your maples and willows of their grateful verdure, and the smoke and chemical gases well nigh destroyed the balance in your crowded cities, you may be glad to fall back on one you have contemned, that will effectually defy all such enemies.

Of permanent trees, the most rapid growers are undoubtedly the Silver and Sycamore Maples, the Larch, and the Paulownia; and amongst ever-green trees, the Norway Spruce and White and Austrian Pines. I may as well remark that much of the rapidity of growth these trees will exhibit, will depend on the soil. In a deep, rich, and rather damp soil, they will grow much faster than in a very damp or poor one.

I ought not, perhaps, to pass over the merits of the English Alder. I have seen this frequently grow ten feet in a season, and besides, the green glossy leaves are very beautiful.

* It is not surprising that our nurserymen have these poplars so confused, when even botanists have led the way. It appears that before Michaux came to this country he was familiar with the "Virginian Poplar," as the *P. Monilifera* of Aiton, in cultivation there. Here in its native place it had a different appearance; and, supposing it some other kind, named it *P. Canadensis*, and wondered why "his father and himself, and several learned botanists, who, like them, had traversed the states in every direction," could not find it. *Populus Canadensis*, plate 95—and *P. Monilifera*, plate 96, fig. 2—of Michaux (*J. J. y Smith's* edition), belong to the same plant, and the cottonwood of the nurseries.

The true *P. Angulata* has the branches angled, as well as the "Virginian Cottonwood." The angled branches of the *P. Monilifera* is probably the reason of its having been wrongly named "Angulata" by the nurserymen. T. M.

[It would be a curious question for a child to ask "Why are the best trees, like the best people, the most scarce?" It would be best answered by the observation that "soon ripe—soon rotten," prevails throughout nature's operations. Time is necessary to develop those qualities that are most in esteem; vegetation that goes on slowly, produces hardness and durability; good children all die young, was the argument against goodness, of a sad young dog; and few enough, indeed, are the entirely solid characters that obtain maturity, or make the mark in the world that their early growth gave promise of. Poor soil, winds, and insects; blown about by false aims and falser doctrines, the number of us humans who attain solidity and enduring fame is fewer than the trees of the forest. But we are moralizing, when we only designed to commend our correspondent's remarks, and especially that portion in which he recommends the topping of the *Populus Monilifera*; the practical result is wonderfully satisfactory. The objection in practice to planting trees that are to be cut down hereafter when their neighbors have grown, is simply that people rarely or never do it; they become attached to their bantlings, and "hate to cut down a tree." Why, in case of crowding, it is the best thing you can do. It may be dangerous to take an axe into your confidence, but, as in education with the rod, it is possible to spare the axe and spoil all your plantation; use it, however, discreetly. Ed.]

CLARA GRAPE.*

THIS valuable seedling of Mr. P. Raabe, Philadelphia, has already been mentioned in the ad-interim report of the Pennsylvania Horticultural Society, 1853, and is described by Dr. Brinckle as: "Bunch medium, berry medium: round, green faintly tinged with salmon when exposed to the sun; flesh tender, juicy, flavor rich, sweet and delicious, quality best." Period of maturity, September.

To the above description we have nothing to add. It was the same berry in 1858, larger in size, and the vine more vigorous and productive. It is to be regretted that such a valuable acquisition has been so long neglected; we should now be able to judge its hardiness in different latitudes and aspects.

Mr. P. Raabe, the originator, has kindly furnished us with the historical facts relating to its origin; we quote his lines:

"The historical part of our Clara is a hard matter to make out as we do not know the parents of that vine. It is a chance seedling as it came up in the middle of the box edging. The first leaves had a very rough appearance, and several times I had a notion to pull it out; but fortunately left it, untouched, out of real neglect; and when it became more firmly established I had to bend it down and let it come up more on the inside of the edge, as the branches were too much in the way. The first few berries made their appearance in 1853. Since that time it was mostly left to itself, and it made a rather wild growth until this year, when it turned out in its full strength."

Nearly the same story as with all the best grapes; a feeble growth in starting; a few berries at the first fruiting; afterwards vigor and fertility.

How many fine seedlings have been thus neglected, and finally destroyed, for want of a little "patience."

But fortunately we *have* the Clara as a precious addition to our still short list of native varieties of great merit. The fruit is tested and stands high indeed. The only thing to be tested is the hardiness of the vine under unfavorable circumstances: but we think that, if *steam* propagation does not weaken the offspring of the parent, they will prove to be just as vigorous, and well fitted to the climate of the middle states. As in all seedlings from foreign grapes, the young plants will require more care and time to come up to the native standards. It was so with the Delaware and still more so with the Rebecca. The only *perfectly* hardy and most vigorous grape vines, seem to belong to the order of the Fox grapes. The more the fruit recedes from that original native type, the more care and attention the vines will require; but that can be no objection to the raising and propagation of luscious grapes. All the most delicate and rich fruits are subject to the same law; and those alone will reap the best crops and the finest fruits, who pay the proper attention to their cultivation.—L. E. BERCKMANS.

ORCHARD HOUSE PRODUCE.

THE following is the amount of produce of an orchard house here for the last four years :

PEACHES.

	1855	1856	1857	1858
Noblesse, 2 plants.....	19	32	29	38
Seedling Noblesse, 2 plants.....	43	33	25	34
Grosse Mignonne, 4 plants.....	54	53	85	68
Early Admirable, 1 plant.....	42	11	32	7
French Mignonne, 1 plant.....	24	18	29	23
Bellegarde, 2 plants.....	67	18	70	19
Barrington, 2 plants.....	51	26	45	31
Teton de Venus, 2 plants.....	4	12	14	12
Chancellor, 2 plants.....	29	48	27	29
Royal George.....		—	66	52
Bellegarde.....	20	—	55	64
Trained on back				

NECTARINES.

Elruge, 1 plant.....	—	6	15	9
Violette Hative, 3 plants.....	100	70	122	73
Pitmaston Orange, 3 plants.....	86	67	82	71
Apricot, 5 plants.....	60	48	12	—
	599	442	708	529

I also find my house useful for many other little matters, such as wintering Cauliflower plants in pots, Auriculas, Roses, &c., as no frost will hurt them if kept dry like the fruit trees. Early in the spring when the trees are put in their places the spaces between are filled with small pots of early Peas for planting out, which often yield a dish 10 days before those sown in the open ground. No doubt there are many other uses to which such houses may be applied, and which every lover of a garden will be always discovering. The house is 21 feet long and 12 wide, and was built exactly as Mr. Rivers directs in the first edition of his book, and cost £25, trees, pots, and all complete.—*The Gardener, Bentworth Hall, England.*

TERRA COTTA ORNAMENTS.

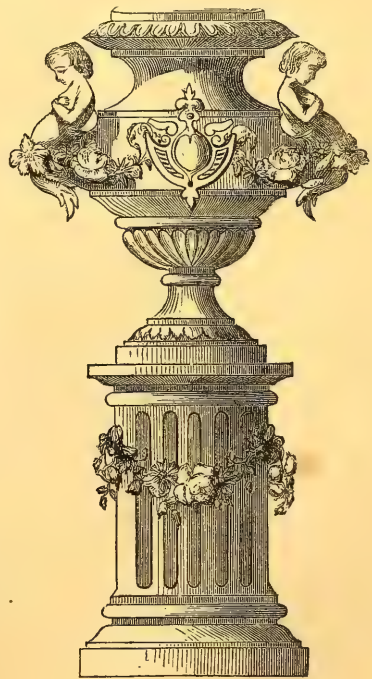
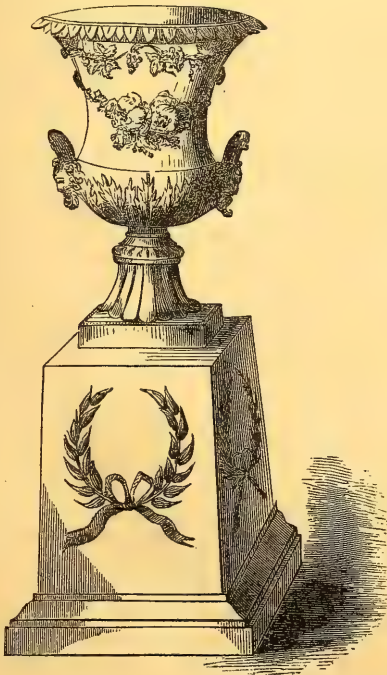


valued lady correspondent called our attention last year to the *atelier* of Ambroise Tellier, of 1194 Broadway, New York, as a most deserving Italian artist, recently settled among us, and prepared to make ornaments in Terra Cotta, for gardens, lawns, terraces, or halls of entrance, in a style that would be creditable in his own sunny land. We hope our notice attracted the attention of amateurs, some of whom may have benefited by the information.

The material employed is perfectly adapted to a northern climate, being as durable as brick.

Mr. Tellier produces very good statues, and we are much mistaken if his plastic material and his accurate eye will not enable him to take likenesses in excellent style.

At the time we mention, Mr. Tellier favored us with a book of drawings of such articles as he desired to produce, and from this volume the following ornaments were selected and have just been furnished by our excellent wood engraver :—



NOTES OF NEW AND RARE PLANTS.

BY DANIEL BARKER, SPRINGFIELD, MASS.

Fuchsia Princess Royal (Veitch); this is one of the very best of the white corollæ fuchsias; tube and sepals, scarlet; corolla, white; flower of a very good form, reflexing much better than most of the white varieties; habit of plant very graceful, and an abundant bloomer.

Sonerilla Margaritacea. This is one of the most beautiful of all the variegated leaved plants. It is a dwarf growing plant, with lanceolate leaves of a beautiful dark green, thickly covered with pure white spots; the flowers, which are produced in great abundance, are of a bright rose color, upon crimson colored stems which rise about four inches from the foliage. Introduced from the East Indies.

Canna Warscewicksii. A sub-evergreen hothouse herbaceous plant, from South America. This is the finest of the genus, which embraces upwards of thirty kinds; it will grow and flower very freely, treated as a summer bedding plant, placed in the center of a round bed surrounded by yellow flowering calceolaria; then a row of ageratum celestinum, *pegged down*; and lastly, by a row of dwarf variegated geraniums,—form a beautiful and very attractive bed.

Bilbergia Liboniana. A very handsome bromeliaceous plant, producing a spike of highly colored bracts, with flowers of a scarlet and purple color, which are very ornamental; requires the temperature of the hothouse.

Strelitzia Regina. An old but a noble ornament of the hothouse, with a flower resembling a bird's head, the colors of which are a bright orange and purple, lasting in perfection a long time. This is one of the brightest ornaments of our hothouses.

Russellia Juncea. One of the most interesting and beautiful of weeping plants, for the hot or greenhouse. It will hang down from three to six feet below the pot, which should be placed in a hanging basket, or upon a pedestal, for which it is best adapted. Its bright scarlet flowers, which are not unlike the trumpet honeysuckle, are produced in great abundance all over the stems, and when in flower, placed upon a pedestal, with its stems hanging down like a weeping willow, is a most beautiful ornament.

Achimenes Meteor. A most splendid addition to this most beautiful and useful class of plants. Color, a rich crimson scarlet, with petals of great substance. It is, without exception, the finest achimenes ever raised.

The best of the present achimenes are *A. Behmontia*—a very fine and beautiful variety, with very large flowers of a rich deep violet plum color, with a conspicuous yellow blotch in the center which is covered over with crimson spots.

A. Leighi. A very free blooming variety, of excellent habit. Color, light purple; near two inches in diameter, which is beautifully sprinkled with carmine spots. The above two varieties form a fine contrast with the beautiful snow-white blossoms of *A. Margaretta* and *A. Ambrose Verschaffett*; a very fine variety; color white, picturesquely marked with bright violet (one of the very best.)

A. Carl Wolfarth. Very fine purple crimson; a very beautiful variety.

A. Dr. Hopf. White, with a beautiful lilac center.

A Edmond Bossieu. Color white, beautifully veined with lilac ; a remarkably free bloomer, and fine habit.

A Edouard Otto. Bright rose ; center white, with lilac veins (very fine.)

A Longiflora Alba. Large, white, with lilac veins ; an old but a very choice variety. No collection can be complete without it.

A Longiflora Major. The finest blue in cultivation ; a superb variety.

A Margaretta. Snow-white blossoms ; the finest white in cultivation.

A Sir Trehern Thomas. A magnificent variety ; color fine ; bright crimson flowers, very large.

Amongst summer flowering greenhouse plants, it will not be too much to say, that the many fine varieties of achimenea are amongst the most useful and beautiful cultivated. It is indeed difficult to conceive anything more beautiful than a collection of those superb flowers when in a high state of cultivation. At no very remote period the achimenea coccinea was the only one cultivated, but owing to the rapid introduction within the last few years of new and improved varieties, of almost every color, they are now very numerous ; and many of them are extremely beautiful, and well worth all the care which may be bestowed upon them. As summer flowering plants for the greenhouse, they are invaluable ; their flowers when once developed continue in perfection for several months.

All lovers of beautiful flowers must admit, that under even ordinary care the achimenea may fairly lay claim to that profuseness of flowering which scarcely belongs to any other genus of plants ; and to this can be added, brilliancy of color and beautiful foliage.

THE PROFICIENT, THE AMATEUR, AND THE PUBLIC.

BY WM. CREED, ROCHESTER, NEW YORK.

THE position of the proficient and amateur, may be said to be correlative, and each, to a certain extent, necessary to the success of the other, whatever their profession or calling ; and thus each may be materially benefited as well as assisted in the accomplishment of the desires and aims suited to their particular spheres of action ; the former ripe with knowledge and justly anticipating, though not always securing pecuniary recompense in a ratio equal to the persevering and enterprising efforts often made through a long series of years, by investigation, study and practice ; while the latter is apparently, with a youthful vigor and praiseworthy zeal, endeavoring to attain strength and manhood more for gratification than emolument, and often with a generous inclination enters the ranks with a determined energy worthy of notice and imitation. It will not then, from this inference, be difficult to understand the position of either the proficient or amateur, and the public being placed in juxtaposition with both ; the machinery is before us, and whatever results may be anticipated will depend upon its perfect working.

It may be asked by some, how in the personal absence of the proficient, can his services best be secured in the case of horticulture and its concomitant branches ? The answer is, through the press ; let us encourage it, be co-workers one with another, and let the streams of knowledge, gushing forth from the fountain heads, be made accessible to all. We now come

more directly to the point we wish to impress upon the reader's mind, and that is, to encourage a desire in public estimation, by more strenuous efforts for the onward march of horticulture, &c., by a full dissemination of its literature, public discussions, meetings, and shows, and so managed as to fix an interest that shall not flag, thus bringing to the cause many thousands who are now indifferent to its importance and value as a delightful study; for what else can ensure gratification and pleasure so diversified and elevating in all that is good and noble during our leisure hours, and which would be a sure step to eradicate that ennui too often existing in portions of the community, and not only have a tendency to relieve the mind from the burdens of every day life, make us more domesticated and less liable to give way to assumed, unsubstantial pleasures, so eagerly seized to "drive dull care away."

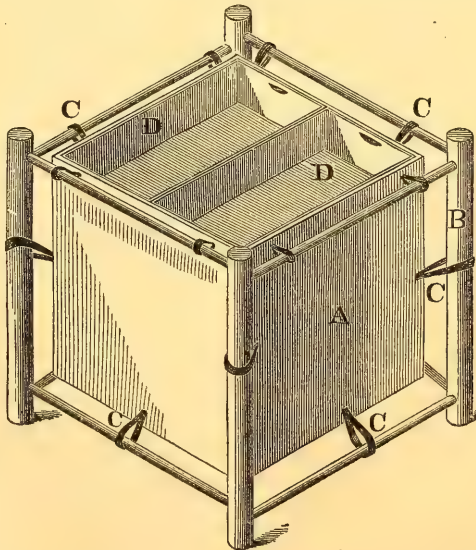
Proficients, let your motto be to encourage the amateur; and the amateur to interest his neighbors, let what may present itself to the discouragement of either, and you will be public benefactors.

May the year 1859 be signalized by the commencement of a new era in the tendency to promote a general study of Nature's wondrous works in this direction, and thus help to make

"Earth an Eden!"

TRANSPORTATION PROTECTOR.

THIS cut of a valuable invention appeared some months since in the American Agriculturist, and has been furnished by our request by Mr.



Henry B. Osgood, the inventor. At the suggestion of fruit growers Mr. Osgood now makes them in any quantities that may be desired. Dr. Ward

of New Jersey, George W. Chapin of Providence, T. S. Gold of West Cornwall, and others, have employed them to satisfaction. Strawberries, with a few leaves over them and the covers well secured, keep their bright color better than when sent in any other way. All who have employed them, we learn, speaks decidedly in their favor. For carriage, for long or short distances, we have no doubt they will be found very advantageous.

DEAR SIR :—My spring frame for packages, or Transportation Protector, for which letters Patent were granted to me on the 4th of November last, is designed to protect fruits, and such things as are easily broken, or damaged by being bruised, during the process of transportation, storing and handling ; and more effectually and easily than can be done by the ordinary means. In Fig. 1, of the drawings, A is a basket, or may be a box, or any other suitable vessel or receptacle to contain the articles to be transported ; B is the protector frame, and C is the elastic fastenings by means of which the vessel A is combined with the frame B, so that in whatever position (when secured by a cover) they may be tumbled upon the ground, floor, or vehicle of conveyance, the vessel A, with its contents, is supported within the protector frame ; the frame B, being enough larger than A to project on all sides, so as to receive whatever shock or jar there may be ; and the elastic fastenings, C, prevent the shocks or jars being transmitted to the vessel A. These elastic fastenings may be rubber bands, or of any other convenient form, or material.

The form which I suppose will be most convenient is, to have the vessel A, cubical, or nearly so. If the load to be transported is very easily bruised, as strawberries, raspberries, and the like,—where lower ones are liable to be crushed by the weight of those above—they should be put in shallow boxes, which are made to fit into the cubical one, and which will hold several of them ; these shallow boxes may be of 1, 2, 3, 4, quarts each, or any other convenient size. When the load to be used does not require the shallow boxes, the protector may be used without them. For bouquets, and other light articles, I propose to make paper boxes with bands of tape looped at suitable places to receive the elastic fastenings.

Whitinsville, Worcester Co., 1856.

FACTS IN GRAPE CULTURE.

BY JOHN B. EATON, BUFFALO, N. Y.

IN the remarkable scarcity of hardy fruits which prevailed the past season, I have found the culture of the grape under glass to possess unusual interest, and have devoted to it much more attention than I have heretofore done, for which I have been rewarded in a very satisfactory manner, by a better crop of fruit than my vines have ever before produced.

Having never been an adherent of the "slaughter-house system" of making borders, mine is chiefly composed of vegetable mould, with a moderate admixture of stable manure, bones &c. In this my vines make fine wood—sufficiently large, round, firm, and short-jointed.

My practice is, to ventilate freely throughout the season, (except, of course, when the outside temperature is too low,) and in this respect differ from some of my neighbors, who implicitly follow Chorlton's directions (which

doubtless answer perfectly well for his latitude,) and keep their grapes upon a short allowance of air until late in the season. The consequence is, that their vines grow late, fail to mature their wood perfectly, and are in no condition to withstand the intense cold to which they are occasionally subjected. Indeed, in some houses the vines have been killed to the ground. My vines ripen their wood early, and are apparently not injured by the cold air in the slightest degree, although my vinery is not one of the warmest, being far from air tight.

My crop of last year suffered much injury in consequence of my having been prevented, by illness, from thinning the berries at the proper time. Many of them necessarily ripened imperfectly, and failed to acquire their proper size and form. A few days of cold rain occurred just before all the sorts were fully colored, and produced cracking and rotting to such an extent that very many of the bunches were ruined. In view of this, I have this season thinned with severity both bunches and berries, for which I was well repaid by the superior size and beauty, as well as higher quality of the fruit, although the weight of the bunches was somewhat reduced. Under this treatment, the Grizzly Frontignan in particular proved much finer than usual. I had considered it rather a small grape, but some of the berries measured fully $\frac{7}{8}$ inch in diameter, and the peculiar color and flavor were well developed.

Regarding the Chasselas Musqué I have a retraction to make, in which I take great satisfaction. I some time since remarked that I could not grow it without its cracking. This I revoke, as it has this season produced both bunches and berries of good size, and so very few of the latter cracked, that their removal rarely caused any perceptible vacancy. I am not aware of having practised any peculiar mode of treatment which could have produced this result, and am inclined to attribute it to the greater prevalence of warm and dry weather this season. An improvement was also visible in the Black St. Peter's, although it has not yet become one of my favorite varieties.

With the White Muscat of Alexandria my success was so decided as to excite considerable remark among those of my grape growing friends who visited me. My bunches, instead of being loose, irregular and straggling, as formerly, were of fine size and form, the berries well swelled, and so thickly set that in several instances a free use of the scissors was requisite to their proper development.

Chasselas de Fontainbleau and White Frontignan were very good, but Black, and Wilmot's Black Hamburgs, did not color quite so perfectly as last season, from what cause I am unable to determine.

My vinery has been quite exempt from mildew for two years past, I having taken the precaution of placing in it, soon after the fruit set, two or three shallow boxes, each containing sufficient sulphur to cover the bottom to the depth of half an inch or more. This being occasionally stirred, to preserve its friability, proved a perfect preventive, and is not only a far neater, but much more economical method of using it than that of strewing it about the house, as it loses no appreciable part of its bulk during the season.

I have been pruning my vines, for the past year, upon the plan described by Mr. Chorlton as the "double spur system," which pleases me much. I prefer it in many respects to the ordinary "close spur" method, and it ap-

pears to me much more in accordance with reason than the latter plan of reducing the vine to "walking-stick" dimensions at each pruning.

When building my viney, some years since, I was strongly advised by an experienced grape grower to furnish it with the so-called "anchor" trellis, as by far the best in use. This I now regret having done, for the curved form of the supporting irons and the near proximity of the parallel vines render it extremely difficult to prevent the spurs from coming in contact with the glass, and the foliage being consequently burned. Of this there is of course much less liability when the training wires are more widely separated and at equal distances from the roof, as I should arrange them upon any future occasion.

I am of opinion that considerable benefit was derived from a mulch of partially cured hay with which my outside border was covered during all the driest part of the season. Being applied soon after a rain, it preserved such a degree of moisture in the border, that I did not find it necessary to apply water outside during the remainder of the season, notwithstanding the drought that at times prevailed.

I last year mulched the inside border, but do not think it advantageous, unless during the first season, and before there is sufficient foliage to shade the soil.

With the exception of a few colonies of vine-fretters, which were extirpated with little labor, and an irruption of large, hairy caterpillars, which gave me some trouble, I have been annoyed by few insects. A few wandering grasshoppers, and a solitary mealy-bug, I think, comprise the remainder of the list of depredators.

I have received your number containing such a very flattering allusion to my views, by my friend Professor Coppock, that I cannot allow myself to appropriate it in silence. My house is very far from being "the *finest* of that form (the curvilinear) put up here." If the Professor had said "the *first*," as I suspect he intended, it would have been in accordance with the fact. As the eminence of "a model of skill" in grape growing is not to be attained in five years, the mention of the fact that such is the extent of my experience, will be a sufficient disclaimer of the fitness of the application suggested by Mr. Coppock.

I am under obligations to Mr. J. F. Allen, for the particularity with which he has replied to my inquiries.

SCIENCE vs. PREJUDICE.

THE MAY APPLE.

BY J. STAUFFER, LANCASTER, PA.

WHILE on a visit to a relative, one of our practical German farmers, a man of good common sense and a close observer, I found that he entertained peculiar prejudices against horticultural journals, and what he called, book-farming.

He evidently seemed to consider those men who exercised their brains and pens to disseminate useful information, as "idle fellows," whose object was to tax the farmer indirectly, by imposing their speculations upon him in the shape of a subscription, deeming it presumptuous in such who never held

the handle of a plough, (however well they might handle the pen,) to undertake to teach and theorize about matters upon which the farmer is daily employed.

My favorite pursuits of collecting plants and insects for my herbarium or cabinet he ridiculed as a waste of time, without any practical utility, wondering what on earth I wanted with those "weeds and bugs."

Piqued at this "*cui bono?*" respecting botany and entomology, I entered warmly into the vindication of science generally, as bearing on agriculture and horticulture more particularly.

I endeavored to impress him with a view of the vast importance that even a rudimental knowledge of vegetable physiology, geology, chemistry, or even entomology, exerted in promoting the best interests of the agriculturist: assuring him the art of cultivating the soil intelligently, required more than a mere knowledge of ploughing and seeding; that in order to keep the soil in good condition, by a judicious manuring and rotation in the crops, involved a knowledge of the organic and elementary principles used in nature's laboratory, not acquired without much reading and some study. Further declaring that the old routine of plodding along ignorantly, actuated by the mere force of habit, was fast giving way, and the drudgery of farming becoming elevated to a profession based on scientific principles.

Thus I almost persuaded him to subscribe to one or more of the numerous journals and papers devoted to the subject, believing as I do, that an investment of a few dollars in that direction would prove a source of profit, by yielding him compound interest twice told.

Somewhat modified in his views, if not thoroughly convinced by my arguments in favor of book-farming, our conversation was interrupted by the entrance of one of his boys, with a long face, expressive of some bad tidings to tell, which arrested the attention of my kind host, who received the unwelcome intelligence that one of his favorite horses was sadly foundered. He repaired to the barn-yard with hasty strides—I mechanically followed the lad, whose motions were less impulsive. There stood the horse, with drooping head, evidently in a bad state, while my uncle, with a perplexed look, slowly walked around the animal, evidently puzzled to know what to do in his dilemma; so he scolded the boys, and finally appealed to me for advice.

I briefly related to him the account given by Dr. Stephen Burgon, of Bucks Co., Pa., published in the third volume of the "Medical Recorder," in which he states that while on a tour out West, in 1814, his horse became foundered, and was cured during the night by having him drenched with several gallons of a strong decoction of the May Apple root. "Now uncle," said I, "as the root is abundant here in your woods, you can avail yourself of the *doctor's experience*, and have the benefit of *my reading*, if you choose.

Perfectly willing, we speedily collected about two pounds of the fresh root, sliced it, and put it into boiling water to steep for half an hour, and then drenched the horse thoroughly—it proved an excellent purge, and by next morning the animal was so far recovered as to eat with a good appetite, and speedily regained his usual health and activity.

This gave such satisfaction to my host, and so excited his curiosity to know all about the May Apple, that I am induced to write out a brief notice, accompanied with one of my own wood cuts, for his and others' benefit.—[Which shall appear in our next.—Ed.]

ROOT PRUNING TO PROMOTE FRUITFULNESS.

BY WILLIAM SAUNDERS, GERMANTOWN, PENNSYLVANIA.

FRUIT trees are planted with a view to produce fruit, and all the labor of the cultivator, after the trees are planted, has this primary object in view.

But how best to attain this result is a question of difficult solution; if the soil is favorable and moderately enriched, the planter will for some years have more wood than fruit. On the other hand, if planted in poor soil, he may procure a few specimens of fruit from his stunted trees the second or third year from planting, but it will only be a few, and the production of these will further arrest growth, and the tree will require a year or two to recover the shock, if indeed it ever attain a vigorous condition.

Availing himself of the results which science has achieved when applied to practice, the impatient planter procures a plantation of (so called) dwarf trees, and again he fails to realize his anticipations. He finds that with all his vigilance he cannot prevent the borer from destroying his apple stocks. His peaches on plum stocks snap asunder at the junction, with a fine crop nearly ripe. His pears on quince die out by degrees without any apparent cause. Humbled by his losses he applies to high pomological authority for advice, and receives it. He is told that his course of culture was wrong. He applied nitrogenous manures when carbonaceous only were wanted. He should have treated with phosphates instead of ammonia.

Turnips should have taken the place of his carrot crop between the rows of his trees. He committed a fatal error in mulching his ground, or, if opposed to mulching, preferring to keep a cultivated surface, his trees were no doubt injured by continued cultivation, and a slight mulching of tan bark would have probably saved them, and, that the finest pears as well as other choice fruits, are as easily produced as cabbages. And thus he is silenced, if not convinced.

The above is no exaggerated picture, although it might well be taken for such; all this has occurred, yet we know that the finest apples have been gathered from dwarf trees, that peaches have lived on plum stocks for thirty years, and that pears on quince roots have proved healthy and productive for an equal period; but the fact still remains, that success is very uncertain, even under the best treatment, in the culture of plants that are grafted upon stocks of weaker growth than themselves.

The object in doing so is to weaken and reduce the growth of wood, and it is but reasonable to expect, that an occasional case may occur where this proves too severe.

I have long been convinced that root pruning will ultimately supersede all other methods of inducing fruitfulness in trees, but not until we become convinced that fine fruit cannot be produced without skill and labor.

It is now nearly twenty years since I received my first lesson in root pruning. A row of plum trees that for many years flowered annually in the greatest profusion, but whose excessive vigor of growth invariably starved out the young fruit, so that it dropped as soon as formed, were operated upon. A circular trench was dug out about five feet from the stem, and as deep as the lowest roots; all the roots met with were cut, and all perpendicular roots were also cut as far as practicable without breaking up the

ball thus formed. The soil was replaced, and without further care these trees afterwards produced yearly a heavy crop of fruit. I have often had occasion since to witness similar results. A few years ago I root-pruned a row of Nectarine trees trained on the inside wall of a cold grapery; previous to that they rarely produced a fruit, and I believe they have not failed in a good crop since.

Entire control over the roots is the great secret of success in the growth of flowering plants. Florists are well aware that a *Geranium* will flower most profusely when the pot in which it is growing is well filled with roots. The same principle is recognized in growing fruit trees in pots, and immense crops are produced.

The operation is so simple and the expense involved so very slight that no objections can be made to the system in that respect, and I would strongly advise those who have not been successful in growing pears on quince stocks, to plant healthy trees on pear roots, as I can confidently assure them that they can get fruit as early, and with much more certainty, if they adopt this method of culture.

ONTARIO GRAPE.

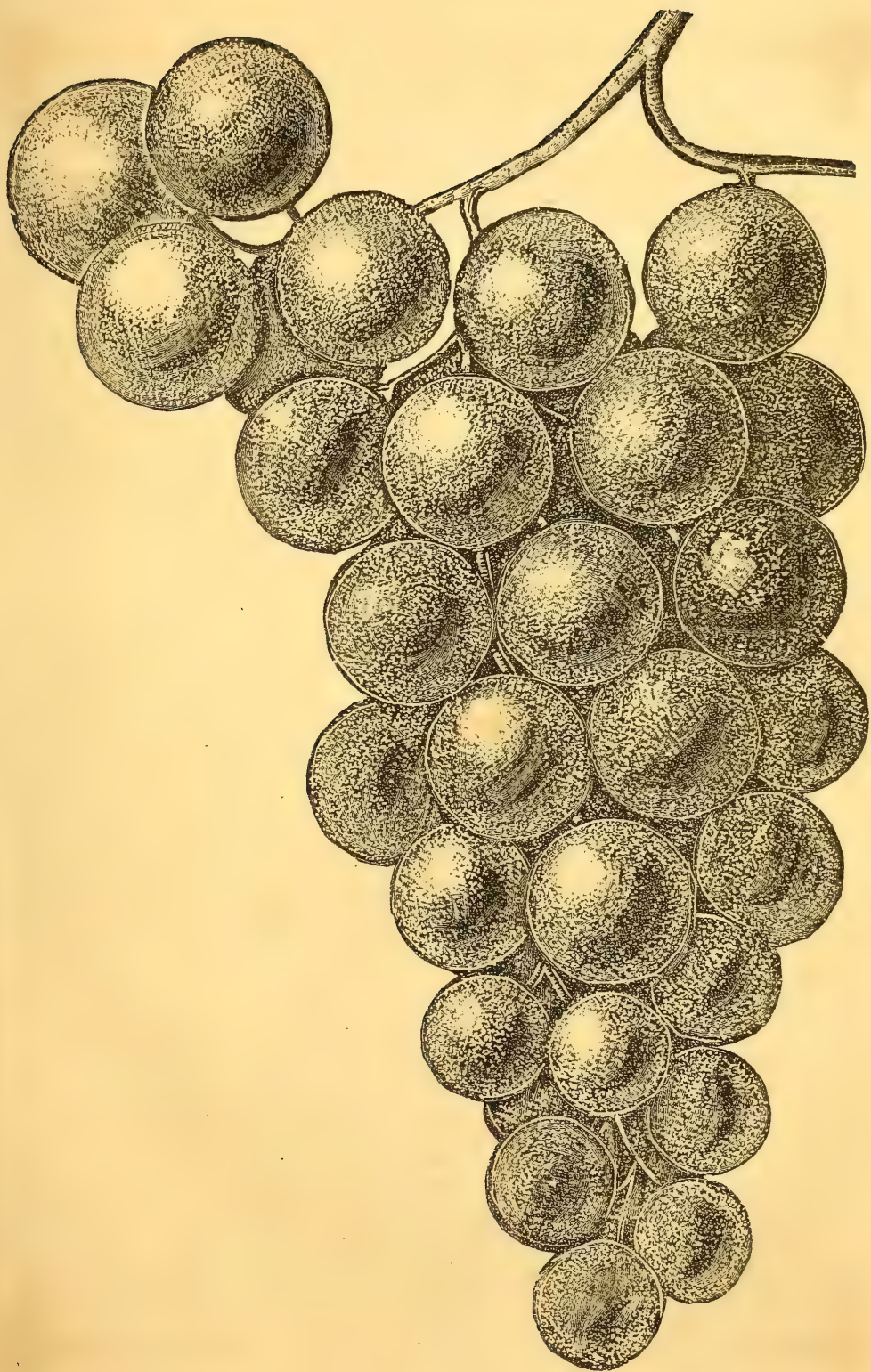
THE above-named grape was sent me from the south bank of Lake Ontario. The berries which I sent you were but a small part of a cluster; the whole would have weighed over a pound. It has been but very little disseminated as yet, and so pleased me that I secured the whole stock. Bunch, large; berry, the largest probably of any grape in the world, some berries measuring a quarter of an inch in diameter; quite round, black, thin skin, buttery; quality good, but not very sweet; said to be a good bearer, a strong grower, and hardy. My vine grew very well the past summer, and showed no signs of mildew, and ripened its wood well. The original vine is supposed to be fifteen years old, and in possession of a man who could not be persuaded to give away a single cutting, until by a little stratagem and \$1 50 per cutting, a few were obtained, from which the present stock has been grown. I send an amateur's wood-cut.

S. MILLER.

CAN PEARS BE PROFITABLY GROWN FOR MARKET?

BY LEWIS F. ALLEN, BLACK ROCK, NEW YORK.

THE article, under the above title, in the May number of the *Horticulturist*, will be readily remembered by those who take an interest in Pear culture and gave it the favor of their perusal. I supposed that a question so plainly asked, and the statement so naturally made of my own experience, and the observations upon the labors of others which came under my own eye, might, perhaps, draw out some facts in relation to pear culture in different parts of the country for the last dozen years, accompanied with statistics of the bearing of the trees, their present condition, the prices obtained for the fruit, and other data tending to throw some light on the present condition



of our American pear orchards, and proving, if possible, whether "Pears can be profitably grown for *market*," or not. But my opponents adroitly *shy* that very pertinent question, and substitute one of their own, which I have not denied; to wit: whether pears, including dwarfs, can be successfully grown at all? They shall not, with my consent, make issue with me on the latter.

Although eight months have passed since that article appeared, I have not heard a single response touching the *facts* I wished to draw out, or proving that a pear *orchard*, either standard or dwarf, of any considerable number of trees, could be *successfully, profitably* and *permanently* grown in any part of the country "*as a market fruit*," to say nothing of the price the fruit had cost the producer, or the quantity marketed. No, not a single one giving a straight-forward answer to my questions. But I have seen any amount of criticism on my own short-comings in the cultivation and treatment of my own trees—not however, by any number of those who had ever seen them when living—and an almost universal judgment on the part of the writers that neither pears nor any other fruit can be grown on the bleak, exposed territory "at Black Rock," "Grand Island," or "the East end of Lake Erie,"—coupled, in sundry instances, with abundance of *personal* remark and covert spite, much more satisfactory to the authors than edifying to the public. As this last, however, is more a matter of individual taste on the part of the writers than connected with the subject, it need not be discussed. Coming from the sources that it did, and understanding well the motives which dictated it, it has been matter of little surprise, and of still less anxiety to myself. Others, too, seem to think it presumptuous to doubt the supposition so universally received for years past as gospel truth,—that pears, more particularly dwarfs, can be made profitable for market culture, when so repeatedly asserted by fruit conventions held, for some years past, throughout the country.

Such being so, I perhaps have been presumptuous, possibly very ignorant on the subject; may be my own eyes and ears have borne false witness to my convictions; yet having read attentively, for thirty years, most of the agricultural and pomological publications printed in the northern states, and attended more of the great State and national fruit convocations than I can now enumerate, and seen their exhibitions of fruits, I still have an idea that my opportunities of drawing conclusions have been as fair, and quite as *disinterested* as some of those who either criticise me in candor, or assail me with personalities.

The positions taken in my May article were, mainly, these: 1st. The pear, as a standard fruit, on its own stock, is capricious in its selection of soil, climate, and position in the United States. As the consequence of this, its success has been various—good, bad, and indifferent; and although it refuses to grow and bear at all in some localities; or barely exists, and yields fitfully in others, it succeeds well in many, and when so, is a profitable fruit for cultivation; and in soils and localities where it will succeed, I recommended its cultivation. 2nd. The dwarf pear worked on quince stock, is equally uncertain, but more capricious, less hardy and reliable in life and bearing, from the fact that its union with the quince is unnatural and imperfect, and requires *quince* cultivation, to which but restricted portions of our soil and climate are adapted; and when successful, which I freely admitted it to be in certain localities, evidence was wanted that its

cultivation will *pay*, as a *market* fruit. I also recommended the dwarf in garden culture for family use, wherever it will succeed.

To elucidate the above propositions, I related my own experience fully, frankly, and truly. I also related the experience of my neighbors, and that of others not my neighbors in other good fruit localities at a distance from me, as I personally saw and had it from the lips of the cultivators themselves. In addition to this : 3rd. I questioned the correctness of the conclusion that many persons would arrive at from hearing statements of the enormous profits of fruit culture, based on extraordinary crops in particularly genial seasons, from individual trees ; and asserted that such statements afforded no true test of the average profits of their bearing. I have had just such extraordinary crops myself, and have seen such on the trees of my neighbors ; but they were seldom in occurrence, and many years might be reckoned in which they bore no crops at all.

These were my propositions, coupled with some collateral remarks running through my "four or five page" article, which some of my critics complained of, as being "little to the purpose." I might also have stated the fact, that after the warmest recommendations, years ago, by the conventions and periodicals, to cultivate all kinds of pear on the quince, it was soon ascertained that but a limited number of varieties would flourish, or grow at all, as a dwarf. These varieties were afterwards, from time to time, still further restricted at the fruit conventions in each succeeding meeting, until now the hardest advocate of the dwarf will scarcely name a dozen well-known kinds which he would risk in any considerable number of trees, *as being reliable on the quince, at all*.

Now, it would naturally be supposed, that amid all the sharp criticism which has been written on my article, some inkling of what I had called for, viz., *statistical information to the point* would have been submitted ; but not an item of the kind have I yet seen. Various statements have been made that in such and such places flourishing young dwarf trees, and even orchards planted, have borne good crops of fruit, have sold for good prices—none of which, by the way, I ever denied—but they gave no *pecuniary results* as to "profits." We know not whether the fruit *cost* fifty cents, or a dollar a *bushel* to produce it, or a penny, sixpence, or a shilling each for the individual pears, nor do we know whether the profit, if any, be made by the producer, the forestaller, or the huckster. We are told how beautiful the growing trees look—as if I had ever disputed that fact ! and, as a matter of course, that I had slandered pear-growing, particularly dwarf, without any sort of reason. Nor is it of the slightest consequence to the merits of the question whether my own individual mode of cultivation was good or bad,—successful or not, so far as the *fact* that they have been successfully cultivated by others is concerned.

I want simply to know *who does* succeed in growing good table pears "for market, at a profit," and where the orchards are located. *That* is the point, and the point only ; and until my question is answered by statements of figures and facts, my position stands unrefuted. "Millions of trees" have been reared, sold, and planted all over the country for *quite* a sufficient number of years to bring them into successful bearing ; and where are the results, either in living trees, fruit, or money ?

Let us see : In the last June *Horticulturist*, page 250, Rivers, of Sawbridgeworth, has an article on the Dwarf, and names six varieties which he

recommends for dwarf cultivation. He has great orchards, but gives no *facts* of their profits, or bearing; and as Rivers is English authority, based on English soil and climate, it is, in any result, no guide to us in America.

In the same number, page. 288, a gentleman in "Southern Ohio" says he succeeds in pear culture, and gets three and four dollars a bushel for his fruit. "*I think* with us here, pear culture will pay." Not a single statistic about details—*proving* nothing to the question propounded.

In July number, page 319, my friend John B. Eaton walks up to the witness stand. "Has grown Dwarfs thirteen years; planted 400 trees of over 100 varieties; a great many have died with blight, and don't know what; probably *worked on an unsuitable stock*, the common quince." Now here, at this "*unsuitable stock*," let me stick a pin. A quince is a quince, and nothing else. It is declared by my excellent friend, John J. Thomas—and I always distrust somewhat my own correctness when differing from him on pomological subjects, when his prejudices do not get the better of his judgment—that the fact of the quince being a smaller and more compact growing wood than the pear, is no objection to their forming a healthy and perfect union when worked upon each other; in which fact I do, *toto calo*, disagree with him. Therefore, if friend Thomas is right, no matter whether it be the "common" quince, or the larger "Angers" which is used for a dwarf stock; being a quince, the pear worked upon it should grow as well on the smaller as the larger stock. So here Mr. Eaton is in my favor, although ignoring my theory in general. He does not give the number of his trees *now living*—not at all; but tells us *he thinks* they can be grown to a profit. I will add an item or two to his statement. I never saw trees better cultivated than his, ever since his father planted his first dwarfs. *They could not be better cultivated*. I know every foot of his orchard grounds, the different qualities of the soil, and have seen the trees every year since planted. I venture the assertion that his *Dwarf* orchard—although he has some fine trees yet standing—in profits and success, *as a market pear*, is a failure. Again: what does he mean by saying that "if he was now to plant a pear orchard, he would arrange the rows in quincunx ten feet apart, placing *standards* at about fifteen feet, and filling the alternate spaces with *dwarfs*?" Why, simply, as I understand it, that expecting the dwarfs to die out by the time the standards get up to bearing size, as they no doubt would, the standards will then fill the ground! Fifteen feet apart for standards! Why, he must have precious little faith in the standards even, for sizeable trees when at maturity ought to stand full twenty-five or thirty feet asunder. He probably expects three quarters of the standards to fail, ultimately, and the remainder will be just right in distance. Mr. Eaton is a damaging witness for the dwarfs, and I will set him over on my side of the question.

But I have to go beyond the pages of the *Horticulturist* to hunt up testimony, either against or for myself. So, in the "Country Gentleman" of July 22d, page 46, Doctor Ward, of Newark, New Jersey, occupies a page. As usual, he makes many candid and sensible remarks drawn from his own actual experience, as well as observations on the labors of others; and had I not found him a short time previous giving countenance to slanders, which he ought to have known at the time were uttered by perfect ignoramuses upon my May article, at the "Farmer's Club" in New York, I should have thought him a little less credulous than now. Doctor Ward, however, mainly sustains my positions, by inference, at least—and if every

writer who really *knows* any thing on the subject would be but as fair as he, we might arrive at the truth after a while. I cannot quote him fully, nor need I, as any one wishing to know his opinions can read them for himself. I applied the word "credulous" to Doctor Ward. He is more than that—witty, even, upon my statements: "The experience of our friend Mr. Allen has taught us on this point at least one fact, that the climate of *Black Rock* is so uncongenial, that further trials need not *there* be made. There the bleak winds from the lakes, sweeping with almost tempest fury over exposed situations, gives such an inclination eastward to the very trees themselves, that could they speak you would hear them say, '*we would run away* if we could, but as we cannot, we must stop here, bearing no fruit, and die.'" As a sample of badinage, or the facetious, this is well enough, but as matter of argument it is beneath him. I will tell Doctor Ward, if he will come to Black Rock, or Buffalo, I will show him in several different gardens and grounds as fine, thrifty and fruitful dwarf pear-trees, and which have borne as good *occasional* crops as he ever saw elsewhere, even in the genial, *windless* climate of Boston,—that Paradise of the dwarfs. But of the "profits" of the fruits of these Buffalo trees, whether they cost two or twenty cents apiece to their happy owners, I say nothing. I will also show him as well-grown pears on standards, and fruits of all *other* kinds common to the latitude, except the peach—and even the peach ten miles down the Niagara; yes, on the "bleak northern shores of Grand Island," as he ever saw in Jersey.

Indeed, I cannot let Doctor Ward off so lightly. He is so good a witness for me, that at the risk of prolixity I would further quote him.

"Of the pear, as a remunerating crop, I still prefer, as I have ever done, to say but little. Many have been misled by extravagant statements on this subject. The trumpeting of solitary instances of great success in cultivating; the enormous yield of some old tree occupying a favorable locality; the extravagant price that under fortuitous circumstances was realized from the crop, being made the basis of a calculation as to what would be the returns for an acre, misleads by producing impressions experience will rarely confirm.

"Hence the importance of just such testimony as we have from Mr. Allen.

"The question is still a mooted one, whether the growing of pears can be made profitable at the present price of labor, unless much of the work can be done with a horse. To avail one's self of this, the tree must have some other than a pyramidal form. Horticulturists are urged on every side to go into the growing of fruits on an extended scale, stimulated by the promise of large profits; but not a word of caution is uttered as to the form of the tree adapted to the orchard, with the view of abating the cost of its cultivation; and hence the *pyramid*, so beautiful, so appropriate to the garden, is transferred to the orchard. Mr. Hovey's beautiful rows of *Dwarf pyramids*, captivate the eye, but the annual expense of forking the ground—with the repeated hoeings to eradicate the weeds, is a shade in the picture that escapes observation. Nothing probably at the present crisis is more needed than some carefully conducted experiments as to the comparative cost of culture of the pyramidal and half standard form of tree."

Of the wholesale vituperation upon myself, and equally wholesale laudation of the Dwarf pear by the nursero-pomological editor of the Rural New

Yorker, written under the prompting of the "largest Dwarf pear nursery firm in America," I need but remark that any amount of denunciation may be expected from that quarter. Nor do the enthusiastic statements of the neophytes in pear growing of that neighborhood—the most favorable fruit region, perhaps, for the general fruits of the climate covering a limited territory, in North America—help the matter. The latter are but beginners, verdant in experience as the lovers of their young orchards. I admit all they say of their thrifty trees; but of the *fruits*, and the "profits," as yet derived from them, they wisely say nothing. I hope to hear good accounts of them hereafter. If the dwarfs will yield a profit anywhere, it *ought* to be in and about the Genesee valley.

Another man—Mr. Field, living on Long Island, who wrote a book* on Pear Culture, a while ago took particular pains to assail me personally in the New York Tribune, to establish his theory. I could show some precious extracts of volunteer letters which I have received from those familiar with his experiments in "Dwarf" culture. Not a solitary fact did he establish of "the profits" of pear growing.

In subsequent numbers of the *Horticulturist* we have the testimony of F. R. Elliott, an experienced nurseryman and pear grower for many years, in Cleveland, Ohio. I was told, not three months ago, by a gentleman who is the proprietor of a large peach orchard and vinery near that city, and who has been eminently successful in the profits and perfection of his fruits from them, that he had tried more than a thousand Dwarf pears, and after the utmost pains-taking, and the best cultivation, they had utterly failed. So with Mr. Huidekoper, of Meadville, Pennsylvania, all sustaining my views. And here I will mention that I have received several letters from different parts of the United States, written by gentlemen before unknown to me by name, who have tried the dwarfs faithfully and well, as they state, and utterly failed in success, thanking me for the courage I had shown in daring to deny the stories so industriously put forth by many of those engaged in propagating the trees. But the crowning judgment which was to chastise my temerity effectually and forever on this momentous topic, was reserved for a meeting of the "American Pomological Society," holding its biennial session in the city of New York, last September. It was an assemblage of good spirits—of the savans, the philosophers, the amateurs, the nurserymen of the country. On taking the worthy President's opening address in my hands, which I received in a neatly printed pamphlet within twenty-four hours after it was delivered, I found that my pear article in the May *Horticulturist* had even troubled the equanimity of Col. Wilder, a gentleman for whom no one has a higher personal regard, or a more profound respect for his pomological labors and attainments than myself—and eleven pages of that excellent document were devoted to the discussion of the Pear and its "profitable" cultivation, particularly the Dwarf, and in which the oft and long told catalogue of one and another man's pear trees and successful bearing, is repeated. Now I submit, in all humility, that it is an unequal battle, to draw up in such formidable array the luxuriant plantations which decorate the heights of Dorchester, the vales of Roxbury, the plains of Brookline, the gardens of Watertown, and all the "hill country" round about Boston, where pears, like their own "cod fish and pumpkins,"

* Pear Culture; a Manual for the Propagation, &c., of the Pear Tree. By THOS. W. FIELD. New York: A. O. Moore.

in State house and on steeple, are a long-time Institution, in one solid battery against an obscure adventurer of the back country, in the field of controversy, like myself. Yet such has proved the fortune of war with me and my poor endeavors, like many another vanquished hero in war and argument.

This address no sooner over, the Society went hotly at work discussing the subject both to the length and depth of its merits; and what sort of work they made of it we will see.

I have, at hand, two very full reports of the discussion on the pear,—its varieties, cultivation, and results,—together with the names of its participants. One is in the *Horticulturist*, the other in the "Rural New Yorker," whose "reporter," if his own assertions are to be taken, *never makes a mistake*. These two documents, although differing in some minor particulars, give us probably the upshot of the remarks on that occasion; and to arrive at an approximation of the *correctness* of their conclusions, it is only necessary to say that quite four-fifths of those taking part in the conversation were either those who grow dwarf pear trees for sale, or were directly interested in the sale of trees throughout the country. It is scarcely necessary therefore to say that the dwarfs "had it" on nearly every vote, "without a count." Yet, in examining the opinions thus offered, it is easy to one familiar with former proceedings of the same body, to see that many opinions and fruits previously "set up" and established as law, were most summarily "knocked down," and thrown aside as "fogyish" and absurd. For instance: "Mulching," which a few years ago was the panacea for all ills of condition or growth to which most of our fruits, from a strawberry to a pear, particularly the dwarf, were heir to, was now as decidedly condemned as it had been in past time commended. Some grew pears in grass,—my unpardonable sin, although the earth was kept open, and manured, and spaded for several feet around my trees—with entire success, and they disliked plowing and spading as cutting off the fibrous roots; while others insisted that grass was fatal to all good treatment, and bearing, and nothing but "the shovel and the hoe" was permissible in "perfect culture." One fruit which was perfect and "best," a short time since, was now cast aside as "cracked," and "blighted;" while another which "promised well," and with such indorsement had been sent by the propagators and dealers broadcast over the country, was now emphatically discarded. And so, throughout the chapter, confirming all my own written opinion that the pear is capricious in its soil, position, climate, and treatment,—particularly the dwarf.

The *ipse dixit*, too, of the Society upon all doubters, past and future, according to one of the reports before me, stands thus recorded:

"The President said, all who had spoken thus far were in favor of pear culture and of dwarf pears. If there was *another side* in this Convention he would like to hear from it. After some moments of suspense, no one responded to this invitation.

"Silence gives consent." There's a decision for you, fogies and pear croakers; and who dare question the *argumentum ad hominum* of such a dicta! Here is another, both wordy and windy enough:

"It is useless to charge failures to climate, for there is no climate in the world superior to ours for growing the pear. To this some of the best Pomologists in the world who had visited this country, would agree. No other fruit can be grown as profitably as the pear, and none is as certain.

The present season we have neither peaches nor apples in Western New York, but our pear crop is fair, as it always is. Much is said about a *proper soil* for the pear. *Any soil that will grow good wheat and corn, will grow the pear.* It *must*, however, be drained for the pear, as it *should* be for the other crops named. *There is no mystery about pear culture—it only requires the exercise of a little common sense.*

"He knew of no case of failure where persons had given to the subject ordinary information, intellect, and care."

Who can doubt the disinterestedness of the source of such expounded law, when laid down by the "Empire" nurseryman of Western New York? Has he or has he not grown and distributed more Dwarf trees; at this moment has he a larger unsold stock on hand than any half score of nurseries put together; and is he a partner in more or less nurseries extending from Rochester to the Mississippi? are questions to be looked after. Hide your diminished heads, you neophytes, who have planted, in all your innocent enthusiasm, your dwarfs by the score, hundreds, or thousands, "on soil that will grow good wheat and corn," and with all your pains-taking, book reading, and ingenuity, seen them dwindling, blighting, and dying year after year, until scarcely one is left to tell the sorrowful story of its fellows; while apple, quince, peach, cherry, plum, and currant, are rejoicing in growth and fruitfulness all around them! What admirable *proof* is here given by *facts* and *figures*, of the abundance of the pear crop in Western New York in the blessed year eighteen hundred and fifty-eight, when the apple crop, for the only season within twenty years' recollection, has been an almost total failure. Will this speaker inform us what has been the current price of Virgalieu, and other "best" pears in the Rochester market during the past bearing autumn; and at what price he will contract to furnish us half a dozen barrels of "Easter Buerrés" on this first day of February?

But, enough of this abortive attempt to reestablish by bold assertion the Dwarf pear *throughout* the country as a successful and *profitable* orchard, or even garden fruit. As to the general action of the Pomological Society, it has my best wishes in finally accomplishing its legitimate objects; but when its proceedings are permitted to go out to the public as an advertising sheet for the benefit of dwarf pear *tree* propagators, and it sacrifices truth to individual interest, it will be in danger of taking its place among other charlatanries of the day. Its ill success in establishing any thing like systematic rule for pear growing lies only in the constitutional uncertainty of the tree itself, when on its own stock, and the unnatural application of it upon the quince—the strong, vigorous wood of one, upon that of the small, shrubby fibre of the other. It is similar to working the pear on the thorn—years ago condemned by everybody, excepting for the merest temporary purposes—and only preferable because the quince will strike, and take root more readily than the thorn. There is one advantage, indeed, in substituting the thorn for the quince; it is not subject to the attacks of the borer, to which the quince is always liable. We know hundreds of trees, on their own natural stocks, in different and wide-spread localities, growing on undrained, adhesive clays, generous loams, or leachy grounds, two feet and upwards in diameter, fifty to two hundred years old, stalwart as oaks, bearing twenty to fifty bushels of seedling pears nearly every successive year, amid neglect, and even abuse, where now, in the same, or in con-

tiguous enclosures, with the most pains-taking cultivation, newly-planted trees of the finer varieties scarcely thrive, and dwarfs refuse to grow and bear successfully at all. But we know few or no orchards of such large, ancient trees. Those we name are but the survivors of original orchards, long ago decimated, beyond even the memory of living men, showing that the pear on its own stock is the longest lived and hardiest of all our fruit trees, when it has survived the hazards incident to infancy and early maturity. There is one point gained, however; Mr. Hovey and some other tree propagators conceding that *dwarfs* are only adapted to high "garden" culture!

Again, my unfortunate May article has aroused the ire of another zealous pen, in the last November *Horticulturist*,—that of another Buffalo cultivator. This gentleman, after a six months' oblivious and blissful ignorance, by the aid of a friend, has discovered himself to be the "constitutionally obstinate" individual I hinted at, and incontinently hurls his ambitious rhetoric and tasteful periods at my offending head. To his truthful denunciation as a culturist, I bow in all humility, as the well-deserved punishment for my temerity in pretending to know anything in the sight of such an immaculate dwarf-pear-grower as himself; and had he then stopped, I should have been, as in all due reverence to such authority, silent. But when he seeks to exalt his own success by the relation of facts which he cannot prove, I object. As to the success of his fortunate neighbors in their dwarfs, I prefer they shall speak for themselves. Let us examine this new testimony: "Our coterie" commenced pear culture with a lot of "cheap" dwarf pears from New York, and this lot of "trash" constituted the groundwork of our plantations. But he "got rid of that stock" by sale to others, when the "trash" proved to be good for nothing, and its place was supplied by the "thousand thrifty, well-grown trees" from Ellwanger & Barry,—or did they die a natural death on his own hands? As for mine, they grew, flourished, and bore fruit, or dwindled, diseased, and died, in about equal proportions to the high-priced trees I got from the same nursery that his "thousand" came from, and elsewhere, of the best I could get, until they all proved "trash" alike; while on one side of them stood a thrifty young apple-orchard, and on the other vigorous and healthy rows of orange quinces, with nursery pears on their own stocks, and a vigorous nursery of apples, pears, cherries, and plums, which Mr. Coppock had more than once seen, approved, and praised,—on good wheat and corn ground, too,—*vide* Barry. If he has "some thousands" growing, *bearing* dwarfs in his grounds, instead of the forty or fifty standing in his garden, with now and then a crop, or a part of them that are worth talking about, he can probably show them to somebody, as well as state in figures the sums of money which he actually got for them, with the number of bushels of fruit. I regret that he has called *me* to the stand as a witness; but being there, I freely testify that I certainly saw some excellent crops of well-grown Winkfields, Bartlets, and others on some of his trees last September, as well as some other trees full of shrunk, cracked, and worthless Virgalieus by the side of them, with sundry vacant spaces where still other dwarfs *once* stood, together with dead and blighted trees of the past summer; and to make a clean breast, I venture a "guess" that he has made ten dollars in buying "some thousand" dwarf trees at the nurseries, and selling them to his townsmen, where he has made a single dollar in the sale of his pears. Yet his history of his own

success has been reprinted with evident gusto by sundry pomological editors, who will be deaf to any denial of his statements.

But enough on the defensive. I stand by every word in my article in the last May *Horticulturist*; and although many of the tree propagators have assailed that article with great bitterness, not a single pear *orchardist*, of a dozen years' experience, has to my knowledge denied its general truth. I admit now, as I did then, that we have localities where the pear, both standard and dwarf, do succeed as a market fruit; but such localities are not frequent. The objection that all those who fail do not properly cultivate their trees, is a calumny. Are nine-tenths of those who spend their money for dwarf pears such consummate idiots as to neglect *their* cultivation, and lose their trees in consequence, when they know that on their proper treatment every thing depends, and that with half the cultivation bestowed on them every thing else in the fruit line succeeds? Those who know any thing of the matter by experience will tell a different story. Trees won't grow in grass! I can point out scores of the finest dwarfs, as well as standards, I ever saw, growing on a turf lawn, with only a four or five foot circle of bare, forked earth around them,—trees which bear good occasional crops, quite equal to others in the deeply dug grounds of the adjoining garden.

The truthful and self-evident testimony of Mr. Norton,—not a tree propagator but a pear grower,—scores the like of which can be produced if men will only tell it,—is a convincing proof that I am correct; and I repeat, that when our markets can show anything like a fair assortment of *good* pears at prices less than sixpence to a York shilling,—a price so that a man can sit down and make a feast on them cheaper than he can on the same number of oranges or pine-apples, I shall believe that the millions of dwarf-trees which have been planted in the orchards and gardens of our country have been partially successful, but not sooner, let others denounce me as they may.

This article, like my other, Mr. Editor, will be complained of by *some* people as being tediously long, and entirely discordant to their taste; but the subject is worthy of full discussion, if it be worth anything,—and I now dismiss it by, in all fairness, asking the *proof*, by an exhibit in dollars and cents, of “the profits of dwarf pear culture for market purposes.”



ADDRESS ON HORTICULTURE.

BY DAVID THOMAS.



It is matter of congratulation, that "several citizens of Union Springs, New York," should have had the good taste to print this address. It contains a world of practical observation, and relates just such experiences as are calculated to give a practical turn to every gardener and amateur who loves to work and to observe. We pencilled nearly the entire address for insertion, but our space will admit of only the following bright remarks from a mind deeply imbued by a love of nature, and a *man* who, having passed a life of usefulness, can yet charm by his pen and his converse.

"In treating of gardens, as in describing of circles, it matters not where we begin; nor whether we range first among esculent vegetables, beautiful flowers, or delicious fruits, for all are interesting to the horticulturist; and I would hope that this remark may serve as an apology for any abruptness or irregularity that may appear in this discourse.

Does any animal except man enjoy the beauty of flowers? I presume not, having never seen any indication of the kind, though hundreds of insects regale on their nectar. Our love of flowers must then be considered as evidence of a higher organization; and those who cannot appreciate it, suffering from the want of some phrenological developement, have claims on our sympathy. Yet as organs are said to be enlarged or diminished according to moral or mental training, so many of our friends now shut out, may indulge the hope of rising hereafter to the enjoyment of more glorious objects, and of purer and more elevated pleasures.

Pure white, as we see it in a sunbeam coming through a clean atmosphere, is the blending of all colors in certain definite proportions; and when it is impure, a surplus or deficiency of some color must cause it. The colors of most flowers are mixtures. The purples are rarely, if ever, pure, being only the intermingling of red and blue. The prismatic colors exhibited in flowers, however, with rare exceptions, are only *six*, for *green* in Botany, like *black* in Optics, is not considered a color.

The intense blue of some Alpine flowers has been ascribed to the deep hue of the sky that bends over them; but the constant supply of moisture may be a better reason. Finer colors have been observed in some species near brooks in summer and autumn, than on similar plants that stood on the dry banks above them.

Plants subjected to high culture are more apt to run into varieties than those in a state of nature; yet some manifest this tendency even in the forest. Our wild *Phlox divaricata* is found sometimes white, as all once were at Farmer's Point near this city; sometimes almost all red, as below Niagara Falls in Canada; and sometimes almost blue, as in some specimens of our own woods, though pale purple is the more common color. No American plant, however, has assumed such varied hues as the Asiatic tulip. Speak-

ing of it in a wild state, Baber, the Tartar emperor, said, "I once directed them to be counted, and they brought in thirty-two or thirty-three different kinds."

And yet the young florist soon observes with surprise that there is one color (often more) into which no variety will ever run, as if the law were imperative,

"Take any [shade] but that."

For instance, we have no blue tulip, blue rose, or blue dahlia—no red crocus, red iris, or red campanula—no yellow phlox, yellow trillium, or yellow peonia; and none are to be expected. To this rule perhaps the hyacinth comes nearest to forming an exception; and yet I have seen none of a good yellow. Even the famous "Gold of Ophir" (so called) has but little more than a tinge of that color.

The winters of western New York are as favorable to herbaceous perennials as those of Philadelphia—perhaps more so—but they are less favorable to half-hardy shrubs. Our heavy loams freeze not half as deep as theirs, owing in part to more clouds at that season—the condensed vapor of our lakes—that obstruct the radiation of heat; and to more snow at the time of our severest cold. Plants that lie snug under this mantle are as safe as they would be in England; and we need only be apprehensive of danger immediately after an untimely thaw. With half-hardy shrubs, however, it is different. Over our snows, winds below zero frequently sweep along; and when spring returns, we often find all *above* the snow line *dead*, and all *below* it *alive*, and in the best condition.

But it is not a sudden and brief severity of the weather, but its long continuance, that proves so fatal; for it is occasionally colder at Philadelphia, at Cincinnati, and at Vincennes, than it ever is at Rochester or Buffalo.

A knowledge of these facts may assist the florist in making his selections. It is not difficult to find hardy plants enough, but a correct taste would prompt him to choose the most varied forms of beauty, and such as would be exhibited in succession throughout the whole season of flower.

Some young trees and shrubs suffer much in winter before the wood becomes hardened and well matured. For a long period I have seen the American Spindle tree regularly killed down; and for several years the Chinese Honeysuckle shared the same fate; but the same shrubs now appear perfectly hardy. When newly introduced, such plants generally receive more attention than in after time. They are stimulated by high culture to grow late in the season; and, abounding in juice, suffer in proportion from the cold. Dry substances never freeze. The seeds of melons and cucumbers endure the greatest severity of our climate; but the plants that spring from them are destroyed by the first touch of frost. Neither oaks nor maples would abide our winters if they continued their growth into autumn. Half-hardy shrubs should, therefore, be planted in soils not too rich, and their growth should be stopped in summer, if possible.

Have we a better guide than nature? Her seedlings generally rise among other plants, where they are protected from the scorching sun, from untimely frosts, and from being thrown out in winter. Many a plant which we foster in the greenhouse would do well in the thick shades of our forests, where the branches above them would lessen the radiation of heat, and shield them from freezing winds. But hot sunshine may be as destructive as a cold night. The difference between the climate of the woods and the climate of the open

border is very great ; and it may explain why many of our native plants refuse to inhabit our gardens. For instance, who has succeeded with the *Gerardias* in the open sunshine ? Or with *Cypripedium acaule* ? I have known the last, however, to bloom for several successive seasons in the twilight of a broken flower pot, open on the north side.

Some shrubs suffer much from exposure to cold winds. In the open ground the White Antwerp Raspberry has been much injured, while ten rods off, under the lee of red cedars, it has done well. The common laburnum may illustrate the same doctrine. One which stood in a door-yard, exposed to the west winds, was damaged every winter, until a building was erected very near it so as completely to shelter it on that side, and from that time during seven years it has not been injured.

Climate, however, is not more important than soil. The peaty earth and stagnant water of the marsh are not more essential to subaquatics, than sand to the wild lupin ; but the limestone lands of western New York are deleterious to many plants that require neither mud nor sand. The *Azalea*, the *Kalmia*, and the *Rhododendron* have declined and perished within two or three years after being planted in the most favorable situations. I regretted their loss, but was not quite discouraged. Having found on the brink of a deep ravine certain plants that grow nowhere else in the neighborhood, such as several kinds of earth moss, some species of *Pyrola* and *Hieracium venosum*, I thought the soil would suit those beautiful shrubs ; and I determined to make the experiment. A pit two feet deep, enclosed by a frame of boards, was filled with it, and two fine plants of *Kalmia latifolia* are now in the most flourishing condition, after a trial of four years. Between them stands a *Pontic Azalea* in the deepest green, and it has grown more in the present season than in any five preceding it.

Perhaps the best method of training roses of the tall-growing kinds is on pillars. Two years ago I had pieces of scantling, twelve feet in length and three inches by four, planted as posts, first perforating them in five or six places with a two-inch auger. Through these holes the stem of the rose is drawn. As it lengthens this operation should be repeated, from time to time, till it reaches the top,—about nine feet high ; and as it depends on no decaying cord or bandage for support, it cannot be blown down by the wind.

To insure the posts from decay, inch auger holes near the ground were bored, slanting downwards, not quite through, and filled with salt. Some persons have used plugs in their posts to keep out the rain ; but it is best to leave them open for a time, till the wood becomes saturated with brine. As the salt dissolves more should be supplied,—say two or three times a year.

To obtain a finer display, I have planted roses of different colors on opposite sides of the posts, intertwining their branches. At one, I have the tea-scented *Ayrshire* and *Violet Episcopal*, by way of contrast ; and at another, the *Baltimore Belle* and *Queen of the Prairies*. I have sixteen posts of this description, and have obtained, expressly for this purpose, a sufficient number of tall-growing kinds. Further experiments are wanted, however, to determine what sorts can most fitly associate, and what shades of color will harmonize the best.

Of all the insects that annoy the florist, the rose bug ought to stand first on the list. It is a perfect nuisance ; and it is doubted if any way to expel them has been discovered, except by manipulation. Even in this northern

land they appear to have inhabited sand hills from time immemorial, and would seem to be now on the increase ; but on heavy loams,—which constitute, perhaps, nine-tenths of this vast region,—I think they have not been observed. This exemption we ought to prize very highly, and it gives us advantages over the south. If a few of our roses, such as the *Chromatella*, are prevented by our climate from assuming the habit of a tree, it is consoling to know that none in all our collections on heavy soils will be defaced by the rose bug. .

We are far north for some kinds of the grape, such as the Bland, Isabella, Catawba, and Alexandria—for though they ripen here, and are good, they attain more sweetness in the south. Others are very excellent. Mildew, however, is often a great drawback in wet seasons ; and there is a mystery about this malady that I profess not to understand,—for W. Wilson, of Clermont, elevated the Sweet Water on poles twenty feet high, and had fair fruit, while on the contrary, I prostrated mine, with equal success. In a dry summer, the whole crop, high, low, or mid-way, escapes ; but when we have frequent rains, there appears to be a zone in which mildew prevails, contracting or expanding according to the weather ; and I have seen where it approached within one foot of the ground. I dislike the trellis, but I had one near which an exotic vine sent up a shoot, crossing a bar three feet high, and bending down on the opposite side. The next year was bad for mildew. Such grapes as grew near the roof, however, were fair ; and so were those where the top of the stem rested on the ground : while the intermediate portion, only two or three feet high, were blighted and ruined.

Some years ago, it was recommended to remove a part of the main leaves, so as to let in the sun on the fruit ; and though I knew that these were important appendages—that in them the sap was elaborated—and that no fruit could be well-flavored without them—yet I knew not but a part might be spared to advantage, and tried the experiment. It proved to be a wet season, and they were ruinously mildewed. Afterwards, I thought the leaves would have been useful in turning off the rain. Grapes under a roof, have been fair in the worst seasons ; and it has been proposed to give them a south aspect under a shed, only two or three feet wide, with a close back. Such a structure would afford reflected heat, repel the cold winds from the north, and keep the fruit dry while the rain was nourishing the roots.

I have no recollection of having seen a mildewed grape where the vine was supported by a live tree. Ten years ago I had a Burgundy that spread over a bush only eight or nine feet high, and the fruit was always fair ; but two years ago, it was raised on a pole to the height of sixteen or eighteen feet, and ever since mildew has ruined the whole of them.

[To be Continued.]



EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *Horticulturist*, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

MR. ALLEN'S REPLY.—The last May number of the *Horticulturist* is historically a curiosity, as from it dated a series of articles in reply which exercised the writers in various ways, according to temperament; they have ever since been discussing it, and now Mr. Allen asks to sum up, not having changed his opinion by the flood of ink. Well—the atmosphere is now cleared—the lightning ceases, and we have an open field for further experiments, the discussion having prepared some for even more active exertions in behalf of pear culture, and others for renewed care of their trees. Let us all now see what will come of it, looking rather to facts than theories, and eating as many pears as we can get, while we leave a share for the expectant public. For one and all, we wish success to their brightest hopes, and in time we may see a full market supply. Mr. Allen writes forcibly, but we have been obliged to curb him a little; we can assure his readers that he is a much more amiable gentleman than some might suppose, from the turn of some of his sentences.

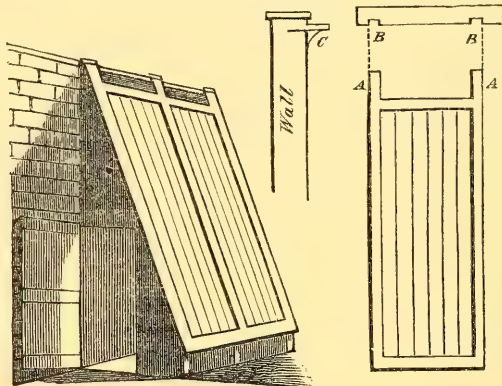
FLORE DES SERRES.—The long delayed *Flore des Serres*, (No. 133) has reappeared. Of original figures it contains *Salvia tricolor*, a Mexican under-shrub with white flowers having a red lip; *Rhododendron Brookeanum*; figures of 20 Gourds, with a long though abridged account of the varieties of that race, by M. Naudin; *Solanum capsicastrum*, a small half-hardy Brazilian shrub, with globular orange-colored berries giving it quite the appearance of a little orange bush; a fine curled white *Chinese Azalea* with red stripes, called Alexander II; *Cypripedium Fairicanum*; and a magnificent looking white hexangular *Camellia*, called the Vergine di Colle Beato.

INDIGENOUS OIL-BEARING PLANT.—The French government has given orders for the introduction of one of our native oil-bearing plants, the usefulness of which we appear to have ignored, though it has long been known and described by botanists. The *Pyralaria Oleifera*, the *O. pubera* of Michaux, and the *Hamiltonia oleifera* of Muhlenburg, grows on the rich wooded banks of the mountains of Pennsylvania, and southward throughout and near the Alleghanies. "Leaves obovate-oblong, pointed at both ends, a little downy, or at length smooth, somewhat succulent, oily, acrid to the taste. Spikes ripening but one fruit, which is about 1° long." Gray.

The fruit is fleshy, drupe-like, and pear-shaped. The name *Pyralaria* is from *Pyrus*, from the fruit, which looks like a small pear, and if a lighted stick is inserted, it will burn like a candle. The experiment of its value will be looked for with interest.

Mr. S. B. Buckley, an excellent botanist, has favored us with plants obtained during his late tour in the mountains of Carolina and Tennessee, as also with the new plant named by Dr. Gray from this discoverer, *Buckleya*.

GLASS SCREENS FOR WALLS.—A simple description of screen, or if you please to call it so, a simple Orchard house, for protecting fruit from frost in spring and for encouraging a fine healthy growth, may be readily formed. For foreign grapes there can be little doubt such a screen would answer; made portable, it may be transferred from the wall to the border to ward off heavy rains, and also assist in increasing its warmth. The trouble of removing would be a simple matter, no rafters being used. The sashes are made upon the most economical



GLASS SCREEN FOR WALLS.

principle, with as little carpenters' work as possible. The glass is made to slide into grooves in astragals its own thickness, three lengths of which fill the sash; a piece of casement-lead put between keeps the cut edge from chipping; a wood pin through the bottom plate keeps the whole tight; no putty is therefore required. The ends of the sashes are left a foot longer (A A) to allow a space of 6 inches clear for ventilation; an inch board 8 inches wide is fixed under the coping of the wall and notched out (B B) for the ends of the sash to rest against, and which is kept fast by half-inch iron keepers screwed on. This board is fixed by a strap of iron passing over the wall, and a bracket under. The sash rests on a plate its own thickness, with an inch fillet on each side at 1 foot clear space from the ground, and at 4 feet from the wall. This and the coping board remain fixed when the sashes are removed. With care in storing the sashes away in winter, they will, on account of their durability, prove in a few years the cheapest covering we can get.

CARE OF TREES.—"In Prussia, Denmark, and the South of Sweden," says Mr. Westwood, "great care is taken of the trees in the public places, and in order to ensure the free action of the rain on the roots, the earth round the stem is kept exposed for about a yard; a circle of bricks or large boulder stones preventing the carriages or passengers from approaching the trees. In the Dutch towns, however, where nearly every street has a canal running along the middle of it, another plan is adopted for defending the base of the trunks of the trees, rendered necessary by the limited space which can be afforded to them, and to the fact that the soil in these semi-aquatic towns allows the roots of the trees to find moisture sufficient, without any additional wet from the surface; for this purpose the lower part of the trunks of these trees is protected by a sloping pavement of brick-work, carried quite up to the bark, and about half a yard high, so that the trees rise, as it were, out of a cone of brick-work.

"The care with which the trees in the public places abroad are tended was also shown in the

manner in which newly-planted young trees are supported. Instead of being, as with us, left to themselves, or supported by two or three rough hedge-stakes, each is trained to straight, strong, cylindrical shafts of wood, fixed firmly upright in the ground, not only affording the trees support, but also allowing them to assume an ornamental and regular appearance at once."

PAWLONIA IMPERIALIS.—By cutting off the blossom buds of this plant in winter, they may be bloomed in a greenhouse or parlour. The flower-buds are completely organized in the autumn. During winter they sit upon the branches warmly wrapped in their thick fur coats; when spring arrives they cast off their garments with their torpor, and burst into blossom. Even if remaining on the tree, they have nothing to feed upon except the little sap stored up in their neighborhood. That sap is as present and active in the dissevered branches as in the branches that remain attached to the tree, and therefore there is nothing to hinder the development of the flowers.

THE SALT WATER AQUARIUM.—A gentleman and his daughter have written us a joint letter, invoking information as to the best books that are accessible regarding the fishes and insects, shells, &c., which inhabit the sea in their vicinity.

This subject has been wonderfully popularized of late, especially in England, and we have students of various grades of research in America, but none of the latter have produced a book readable by the unlearned in technical names. There is a volume, however, which every lover of nature may and should read with pleasure, entitled "*Glaucus; or the Wonders of the Shore*," by a no less successful author in other walks of literature,—Charles Kingsley, author of "*Hypatia*" &c. It has been republished in Boston by Ticknor & Fields, and is so simply elegant in its language as to be readily understandable. The other writers on the subject are E. Forbes, Gosse,* and a few others whose books have not been reprinted, but we hope a sufficient demand will be created by admiration for Kingsley's book to induce the same publishers to issue at least Mr. Gosse's.

How insensible to "the Wonders of the Shore" are nearly all the summer visitors to the sea, is happily set forth by Kingsley, and he then leads the uninitiated to admire the curious creatures which have been placed on the shore in so attractive a manner that we wish space was at our command to insert in these pages the whole neat little duodecimo.

Speaking of the Mermaid's head, *Echinus miliaris*, our author says, "conceive a Crystal Palace whereof each separate joist, girder, and pane grows continually without altering the shape of the whole, and you have conceived one of the miracles embodied in that little sea egg, which the Divine Word has, as it were to justify to man His own immutability, furnished with a shell capable of enduring fossil for countless ages, that we may confess Him to have been as great as when first His spirit brooded on the deep, as He is now, and will be through all worlds to come.

"And often," he continues in his happy manner, "standing on the shore at low tide, has one longed to walk on and in under the waves, as the water-ousel does in the pools of the mountain burn, and see it all for a moment." This may come to pass, and has even been practised by the use of proper clothing; but make your catalogue complete if you can of all that you can find, yet how small the number compared with the multitudinous natives of the sea! From the bare rocks above high-water mark, down to abysses deeper than ever plummet sounded, is life—everywhere life; fauna after fauna, and flora after flora, arranged in zones, according to the amount of light and warmth which each species requires, and to the amount of pressure which they are enabled to endure. The rocks have their peculiar little univalves, their lichen-like sea-weeds, in myriads; lower down, the region of the Fuci (bladder weeds) has its own tribes of periwinkles and limpets; below again, the region of the corallines and Algæ furnishes

* A Naturalist's Rambles on the Devonshire Coast. The Marine Aquarium, &c. See also Professor Harvey's Sea Side Book. Mr. Gosse has also published "*The Canadian Naturalist*" which we have never met with.

food for yet other species who graze on its watery meadows, and beneath all, and still so high as to be uncovered at low spring-tides, the zone of the Laminariæ (the great tangles and oar weeds) is most full of every imaginable form of life.

"Of all the blessings," says Kingsley, "which the study of nature brings to the patient observer, let none be classed higher than this;—that the further he enters into those fairy gardens of life and birth the more he learns the awful and yet most comfortable truth, that they do not belong to him, but one greater, wiser, lovelier than he; and as he stands silent with awe, amid the pomp of nature's ever-busy rest, hears as of old, 'The Word of the Lord God walking among the trees of the garden in the cool of the day.'"

We are sure our correspondents will be delighted with this book; they may collect these curious "Wonders of the Shore," and keep such as will survive the treatment in Aquariums with advantage and pleasure, but their enjoyment will be immensely increased when they learn to observe them with an approach even to science, and Mr. Kingsley will give them ideas of study that will make a pursuit and an enjoyment for even a long life-time.

We know of several Marine Aquariums which are "self-supporting," requiring very rarely a change of the water, that are kept at a great distance from the sea; and truly beautiful and interesting they are,—quite a step in advance of those filled with fresh water, and it may be hoped that while their number increases, the study of natural history that should accompany them will also progress.

PARKS.—On the 15th instant, the plans for a park at Fair Mount, Philadelphia, are to be examined and decided on: we learn that there will be considerable competition. As to situation and water frontage, Philadelphia has the advantage, but in size and magnificence, the example is that of New York. The Central Park is being pushed through by Mr. Olmsted, the superintendent, as fast as large means will allow. He appears to be most energetic, and is determined to accomplish all that lies in his power while the opportunity is presented. In January we saw 2,200 men employed, and were glad to observe that Mr. Calvert Vaux had been appointed assistant architect to the great work.

THE DIOSCOREA.—It will be remembered that last year, Dr. Hollick, of Staten Island, New York, promised to give our readers the results of another season's trial of the Dioscorea. We have his statement, which we consider very favorable, and shall give it in the next issue. Meantime, he has sent us a few tubers to distribute to different climates. The time of planting, at New York, was the 23d of March.

MULE BIRDS.—At the late Crystal Palace Exhibition, Mr. John Beach, of Bradford, showed two mules bred between a cock goldfinch and hen bullfinch; Mr. H. Hanby, of Hyde Park barracks, had a mule raised between a goldfinch and greenfinch; and Mr. E. T. Keys, of Woolwich, exhibited a mule between the skylark and sparrow. "There can, therefore, I think, be no doubt that very many of the beautiful and interesting birds of sunny climes would cross with the songsters of our woods and fields, and would be able to live in our gardens and pleasure-grounds. By being fed in a fixed spot they would probably not stray far off, and thus a new charm would be added to our homes."

CATALOGUES, &c., RECEIVED.—East Avenue Nurseries, of C. P. Bissell & Salter, Rochester, New York: List of 54 varieties of hardy grape vines, with blackberries, currants, raspberries, strawberries, &c., &c. These 54 comprise all that have any reputation, and at prices so reasonable that there is no excuse for not procuring a supply.

Sixth Annual Report of the Buffalo Horticultural Society. This is an old report. We should be glad to receive the later ones.

Wholesale Catalogue of Flower Seeds, for 1859. J. G. Waite, 181 High Holborn, London. A most extensive affair, including all that are "wants."

Evergreens, shade trees, fruits, vines, roots, &c., for sale by David J. Griscom, Woodbury,

N. J. Mr. Griscom has very fine evergreens, of large size, and pays particular attention to orders.

Eddy's Patent Self-Feeding Stall, described. Henry Eddy, M. D., North Bridgewater, Mass. Worthy of the attention of all who keep animals.

List of fruit trees cultivated and for sale by S. W. Houghton, Winchester, Tenn. This is the first gun from Tennessee, and it "promises well" for the progress of the State. Let us hear from some of you.

Gossip.

THEY have lately had an exhibition at the Crystal Palace, London, of Canaries and cage birds, which proved a success. Mr. Kidd, the ornithologist, furnished a daily lecture on the natural history and judicious management of song birds, and it may be justly stated, that the whole exhibition could not fail to be a source of pleasant and highly rational enjoyment to the general public as well as to the bird amateur. Among the foreign birds were two remarkable parrots,—the first a grey, who spoke the words,—Walk in, Mr. Cox; Polly wants her breakfast; Puss; mocks the cat; calls the dog Toby, and then laughs; walk in, Sir; who are you? Polly is a darling. Speaks many names, Elizabeth, &c. May be handled by strangers. Is very quiet.—Green Parrot, (South America). Words spoken by this bird—Eliza, George, Charles, Charley; Polly, Polly; Oh you pretty Polly; laughs; imitates talking, and children crying. Quick in imitating sounds and tunes. A very good-tempered bird.—A Rose-breasted Cockatoo. Words spoken by this bird—Pretty Boy, Polly, Puss, How do you do. Calls by name several members of the family, &c. Highly commended. But the most attractive bird was a Mealy Turnercrown, which sings and talks with marvellous fluency, without requiring, as in the Arab tale, a Grand Vizier to be his interpreter. In clear, soft, silvery tones, like those of a silver bell, or blushing school Miss, he simpers forth, "Pretty dear, call the doctor, Polly sick! Polly sick!" He, besides, calls the house dog by name, whistling to him. Yet his tuition was at second hand, by a paroquet: and the funny contrast to the listener, between this delicate little speaker and his clear, full enunciation, drew crowds around his cage. His money price is £20.

PEOPLE very frequently are puzzled with the idea of conducting and non-conducting powers, but they are very simple. The main business, first, with pits and frames is, to prevent a too sudden loss of that interior warmth which has been previously accumulating. This is what they term arresting radiation. At the same time it must be admitted that covering materials—in the case of cutting winds—certainly avert that refrigerating action which winds are known to exercise by passing over bodies warmer than themselves. Dryness is a great essential, and, although we cannot dry mats when we choose, we can continue to renew the straw when it becomes much draggled. I had almost forgotten to suggest, that all glass should be kept clean.

MR. RIVERS says, that boiling coal tar with slacked lime will make a shining surface on woodwork, and walls of any clay, or turf, which is as imperishable as stone: it is, therefore, better than all the paints in the world for the outside work of these houses; and I have proved that rough surfaces may be made in his way as durable and hard as cast iron, by using the dust from a smith's forge over the tar, as soon as it is brushed on. I had six wooden spouts, each 18 feet long, 4 inches wide, and 6 inches deep, for a particular purpose, and the man who supplied them (God forgive him!) assured me that they would last three lifetimes, if they were kept painted. But they soon turned so leaky, that a painter, with nothing else to do, could not

make them hold their parching jaws together for an hour, in hot weather; so I took the painting of them into my own hands, and gave them three good thick coats of hot tar, and as much of the forge dust every time as the tar could suck in. From that day to this these spouts have been as sound as a bell; and when I use tar for paint, I dust it immediately with that smithy dust, and brush off what is not fixed after the tar is quite dry.

PAMPAS GRASS.—Keep the Pampas in the same pots till March, and in a cold pit, if you have one, or in the greenhouse, in frosty weather, and out in fine. Dig out a pit one yard across, and two feet deep, and fill it with fresh sandy loam, and a little very rotten dung, just what one would like for an early bed of Radishes. Plant the Pampas in this, and water once a week all through the summer. The best place for it is on the grass in front of evergreens, or the back part of a plant border, next to a Portugal Laurel. The dark evergreen is to set off the beauty of the spikes.

THE principle of the Waltonian Case is the same as that by which tanks of water are heated, by passing hot-water pipes through them. The water is the body for retaining the heat in both cases. The chimney from the lamp, or gas-jet, in the Waltonian Case, must pass through a tin or zinc case full of water, as the hot-water pipes run through a tank. Heat a tube, or pipe, with either smoke, steam, gas, water, oil, or tan, and get the tube or pipe through a vessel of water, and the principle is the same. The water is heated by the heat of the tube, and parts with it slowly, and more uniformly than from tubes. If you bend a one-inch iron tube, and place the bent part against the back of a cottage grate, or the back of the fire, and run the two legs into a cupboard on either side of the fire, and there let both ends discharge into a can of water, on two levels,—one leg near the top, and the other leg near the bottom of the can,—you can have a can of boiling water in your cupboard. Or have a longer pipe, so as to get both legs out through the wall to the garden, or sun side of the house; then place the two legs in a long, flat, shallow vessel, like a beer-cooler, but on two levels, top and bottom, as in the can, and the beer-cooler will soon be as hot, or rather the water in the beer cooler will soon be as hot, as was the beer or wort when they put the hops in it. From a lid to let up this heat, it would be easy to have bottom heat on a different principle from the Waltonian,—the principle of heating the water by its own circulation; while Mr. Walton heats by contact, without circulation.

LARGE PEACH CROP.—The Brothers Loughry, of Adams County, Ohio, raised the past season *thirty-six hundred bushels of peaches*, which brought them in the Cincinnati market an average of three dollars per bushel, or an aggregate of over \$10,000. Deducting the expense of gathering and marketing, the net product was \$9,000. This crop was from an orchard of only ten acres, with the exception of about one-eighth of the amount from a second orchard just commencing to bear. Mr. L. states, that on their grounds the peach-crop has failed only four times in the past ten years. Such an instance of success is well worth recording in this season of general failure; and is calculated to inspire other fruit-growers with the hope that like good fortune may yet be theirs. He intends planting pears largely, with peaches, for market purposes, believing, as we also do, that with a judicious selection of varieties, and proper culture, the pear-crop will be found reliable, and in the long run profitable as the peach. Mr. L. lately visited the Columbus Nursery, of Bateham Co., to engage fruit-trees to start his son on a farm in Pickaway county.—*Exchange.*

BAKED PEARS.—Is it generally known that most of the keeping-pears (I can answer for Beurré Rance, Easter Beurre, Swann's Egg, Chaumontel, and St. Germain,) are excellent when baked, without any addition,—the juice being a rich syrup, giving the impression that a large quantity of sugar had been used? In this way windfalls, &c, otherwise worthless, may be turned to account. They require merely to be wiped clean and put into a dish; if heaped up so much the better.—*P. W. J.*

FOREIGN NOTICES.

NEW ROSES—1858.—*Hybrid Perpetuals.*—*Abbé Feytell.* Deep rose, shaded with lilac; globular, very large, and full.

Duke of Cambridge. Bright, vivid rose. A great improvement on *Madame Fermion.*

Evêque de Nîmes. Deep, vivid crimson. The petals are disposed in the form of a rosette, which gives it a very unique appearance. This rose is most decidedly the gem of the season.

Gloire de Lyon. Rich, velvety, purplish crimson, intensely dark, in the way of *Arthur de Sansalles.* It is, however, thought to be superior to that excellent variety.

La Bella Egamé, or *Madame Damet.* Rosy lilac, beautifully cupped. A neat, pleasing variety.

Louise d'Autriche. Light crimson. A large, showy rose.

Madame de Besse. Pink, with rosy centre, in the way of *Madame Knorr.*

Madame Vigneron. Pale pink, large, and very double. A very double and fine new Rose.

Madame Van Houtte. Light pink, most beautifully cupped; of exquisite form.

Marie Thierry. Deep rose, shaded; an expanded rose; large, full centre, and very double.

Monsieur de Montigny. Very rich, deep rose, shaded with purple; large, and double. An abundant bloomer, and the largest rose of the season.

Queen of Denmark, called also *Etoile de Marie.* Pale blush, shaded with pink; very stiff petals; and first-rate form, in the way of *Madame Vidot.*

Thomas Rivers. Rosy lilac, shaded like *Colone* sy, but greatly superior, being larger, with finer shaped cup, bud, and flower.

BOURBON.—*Madame Comtesse.* Deep flesh-color; finely formed. A seedling from *Louise Odier.*

HOW TO KEEP GERANIUMS OVER THE WINTER.—Take them up on a dry day. Knock all the mould off their roots. Shorten them down to two or three joints. Lay them in the sun for a few hours if you can. Mind there are no leaves on them. Have ready some quite dry pit (not sea) sand. Bury them four inches deep in the sand, the roots downwards. Keep them dry all winter; you may do that in a good cold frame which does not drip. Fine coal ashes will do as well as pit sand.

If you have conveniences for keeping frost out you need not bury them, but may keep the ends out of the sand.

THE MUSCAT HAMBURGH GRAPE.—It will be remembered that this was the variety which took the prize at the Pomological Society, as being the best new grape having a Muscat flavor. At the time the Society made the award, it was stated that this variety would ripen with as low a degree of heat as the *Black Hamburgh*; but an opinion having got abroad, which is believed by many, that it will not ripen in a house without the aid of fire heat, which the *Black Hamburgh* will do, considerable disappointment has resulted. It is very satisfactory for us to be able to state, that, at the last meeting of the Pomological Society, Messrs. Henderson, of Pine Apple Place, exhibited a bunch grown upon a shoot, which, during the summer, had been introduced into an ordinary greenhouse, the plant undergoing no cultivation whatever, and receiving no heat, except one evening during the present month, when frost was expected. The berries were quite ripe, and possessed the marked musky flavor.

THE PRUNING, CLEANSING, AND DRESSING OF FRUIT TREES.—All pruning should be done the moment the leaves have fallen, whatever be the period at which they are required to be forced. To go into detail about pruning in general would occupy too much space. But I must say a little more about cleansing and dressing. The object of all dressings is two-fold,—to destroy whatever insects, or eggs, may exist, and to avert their attacks in future. There are

several practices extant as to the kinds of dressing to be used: but I would have it borne in mind, that soft soap and sulphur are the two principal things on which the gardening world at present depends—that is to say, as to power. But in many cases it becomes requisite to use some thickening medium, to form a body of some endurance on the wood; and for this purpose such things as lime, clay, cow-dung, &c., are used. I will, therefore, merely offer an universal recipe, which, although it may not suit every case in gardening, is yet of service in nine cases out of ten.

It is this—one gallon of water, in which four ounces of soft soap are well dissolved; add then as much sulphur as it will carry; and finally thicken with clay to a regular paint. This mixture may be applied to any fruit tree in a rest condition, but not to living foliage. The stems should be thoroughly painted with this mixture, not leaving a crevice untouched. In the case of vines, the loose bark must be stripped away as clean as possible, before applying the paint. This is a most indispensable procedure, for this extraneous bark is of no real use to the tree, which, indeed, in a state of high health, seems to make an effort to cast it off. The stem enlarges, and, like a fast-growing youth, the same coat no longer fits, and, in attempts to wear it, the seams, or other parts, give way. T. R.

RUSTIC WORK.—I see that one of your correspondents is inquiring about rustic work. I therefore beg to send you a plan of making rustic vases, as I made a few about twelve months ago. As most of our florist friends are no doubt in the habit of getting their groceries from one place, I advise them to go to their grocer and get him to give them a small butter-tub; when got, saw it in halves, or according to the exact depth they would like the vase; after which go to the Oak-yard with a saw, cut some tolerably straight sticks, without bark, one inch or more in diameter; but do not forget a pillar of three inches in diameter. I give 2s. per cwt. for the Oak.

Nail the sticks close together all round the vase, in whatever form may suit the caprice of the individual. Make holes at the bottom for drainage, by boring with a red-hot poker; after which nail the vase to the top of the pillar, being sure to make it firm. Paint over with oak varnish, thinned with a little turpentine. It will not disgrace the Crystal Palace. For a finish I nailed a few crooked sticks round the top, which appear like handles, and round the rim a piece of strong rope.—S. TATTERSALL.

THE *Anachis* which infests rivers and lakes in England seems likely to spread over the whole kingdom. It has already seized upon the large basin at Kew, and obstructed several rivers; the thread of this plant is wonderfully rapid.

The moon still has an important agency assigned to it, in moulding the incidents of climatology, at least, and this view is by no means confined to what is technically called popular belief; many of these points have been examined by the aid of the most rigid analysis of long periods of observation, with the result of rejecting the whole agency in every case. The Herschels repel the charge or assertion that either of them advocate existence of any system of lunar influences, and they particularly repudiate the weather table often attributed to them.

It is curious to notice that so important an observation as that of the quantity of water falling in rain, had its origin in bold doubts of a prevalent belief that fountains and rivers were supplied from internal masses of water, arteries and veins of the sea, circulating the life blood of the earth. A French author, Demys Papin, printed a work on the *Origin of Fountains*, at Paris, in 1674, the object of which was to show that the rain and snow-waters are sufficient to make the fountains and rivers run perpetually.

IPOMÆA CÆRULEA.—The following statement may perhaps be interesting to some readers. Mr. Glover, of Smedley, Manchester, has an *Ipomæa cærulea* (which grows in one of his fern-houses), that has produced, during the past season, 13,000 blooms. Strange to say, these blooms were weighed, the weight of them being 25 lbs. Now this said plant must have

received a deal of nourishment from some quarter or other. It clearly proves Mr. Beaton's assertion that any vigorous climber must exhaust the soil in a bed in the course of about three years. The above statement respecting the *Ipomæa* I had from Mr. Glover. It was a splendid sight to see the blooms as they came forth.—S. TATTERSALL.

ARBOR WALKS.—“I propose to make an arbor sixty-six yards in length, six or seven feet in breadth, and nine feet in height. I am informed that Hornbeam is the best tree to use for the purpose. I shall be glad to know about what number I should require for a walk of the size mentioned. And I shall also be thankful for any hints as to planting, training, &c.”—G. W. H.

[There is a similar arbor walk at the Stud House, Hampton Court, of great age, full of Hornbeam trees, and romantic legends. In the olden times, trees were planted too thick for these arbors; but the Hornbeam will bear to be planted as close as four feet apart for an arbor walk,—that is, a walk with a row of trees on each side of it, feathered to the ground, and covered over-head with the branches and tops of the said trees. All they require is, to have the ground trenched for them,—say, four feet wide to begin with, and two feet deep.]

WATERPROOF CEMENT FOR AQUARIUM.—I have been making an aquarium,—plate-glass front and back, and slate ends and bottoms,—and was very much puzzled to get it water-tight. Here is the recipe for a cement that is waterproof, and will stand either heat or cold:—One part gutta percha; two parts pitch; simmered in a ladle, and well stirred. When hot pour it in the joint, and let it cool gradually. When cold it is tight.—ROSEA.

Correspondence.

Our London Correspondence.

I WAS amused the other day, at seeing a paragraph in the *London Leader*, on “dinners,” in which it is stated that Caulaincourt (ambassador to St. Petersburg from Napoleon I.) once gave a dinner, at which, among other features, there were seven pears, which cost 300 francs, \$60 a piece. “But,” says the writer, “Paris in 1838 has left St. Petersburg in 1806 far behind. At Chevet’s, in the Palais Royal, there are pears in the windows equal in size to small pumpkins. Curiosity the other day prompted me to make inquiries as to the price of some of them, and Madame Chevet politely informed me one might be had for £25, (\$125!) They are, however, very seldom purchased, but let out in the same way as plate or chandeliers, to make a show, for 5 francs (\$1) a piece.” There is a pear story for you, and I have no doubt of its truth from what I saw myself.

It will soon be time for your importers to look about for the best new roses of 1858, and I name for their benefit two or three of great merit. Of hybrid perpetuals, *Eveque de Nîmes*, a crimson, and *Triomphe de l’Exposition*, with Colonel de Rougemont, are the favorites. The latter eclipses *Baronne Prevost*, and supersedes it. *Louis Chaix* is a superb crimson, descended from *Geant des Batailles*, and very promising. We have now a better assortment of hybrid perpetuals than could have been hoped for a few years ago, and I trust your amateurs are well supplied with these varieties.

Dr. Lindley notices the new California strawberry, called *Fragaria lucida*, with the following remarks:—“It was introduced a short time since through M. Van Houtte. Sufficient time having now elapsed to ascertain its qualities, Mr. Sprickelsen, an experienced cultivator at Hamburg, makes the following report. He is of opinion that great things may be expected of it, and that it will give rise to a new race of double-bearing varieties. Every runner and each branch of the runners forms a strong flower-bud. It moreover, ripens late, that is to say, at

Hamburg, towards the end of July, when other strawberries are over. It is far better flavored than any late English sort. Its fruit is, however, deficient in size, flesh, and juice. The habit of this *Fragaria lucida* is described as very dwarf, the leaves have very short velvety stalks, of a red color; they are deep green and shining on the upper side, but woolly beneath. There is generally but one flower to a truss, and that is remarkably large. The fruit is sweet, without acid, but a little vinous. The "seeds" are sunk in the flesh. Madame Elise Vilmorin, who has made the strawberry her specialty, is said to expect great things from it. It is no doubt the same as a plant found by Douglas and called by him *Fragaria Macraei*, which Sir Wm. Hooker referred to *F. chilensis*."

The Economic Museums, at Kew Gardens, are among the most valuable institutions of this great metropolis. Sir William Hooker's efforts have been crowned by the most ample success and popularity, and are attended with most interesting commercial advantages. They are far more interesting and important than the most sanguine promoter could have anticipated upon their first formation. So huge have they grown that the new museum is wholly devoted to illustrations of the products of Exogens, while the old house is filled with Endogens (or Monocotyledons) and Cryptogamic vegetation. It is hither that students should direct their steps if they wish to know what tropical palm trees are, and to examine at their leisure the thousand curious forms of vegetation of which they can never learn much from books alone. Winter is as good a time as any for the study of museums, and it is to be hoped that the approaching months will be vigorously applied to that purpose by many a young aspirant to scientific fame and social rank.

A new room has been opened at the British Museum, containing an extraordinary collection of foreign plants and seeds—sections of the trunks of trees, showing their structure, and specimens of woods, polished and unpolished; they thus display the variety and beauty of the grain of the woods. One table displays cabinet and other woods, and the woods used by the North Western Railway in the construction of their carriages; and another what may be called the curiosities of botany, such as the efforts of a tree to cover a wound—a spike-nail embedded in oak and covered over with many subsequent layers of wood, &c. This is interesting and instructive, though less so than Sir William Hooker's exhibition of the curiosities of grafting, where much is to be learned by the eye. These exhibitions are to be commended, great results often being brought about by a practical mind viewing the "rarities" of nature's works. How much better than the ever-active energy displayed at Washington in President-making, and trifling debates. Why, I understood before I left America, that even the plans for planting the public grounds designed by Downing, have been left to take care of themselves, and instead of one good national example of "Park and Plaisance," the majority of the public grounds are growing up with *Ailanthus* and *Abele* trees! I write it with shame; the very powder wasted in firing salutes for empty-headed officials, would more than create a fine "Place d'Arms," and keep it forever in order. But the "civilization" which revels in beauty will come in time. [There has been more money wasted in *frippery* on the new capitol, than would have bought all the ornamental trees for sale in the Union.—ED.]

I went down in November, to Chatsworth, to see the revolutions there created by the new proprietor, lately Earl of Burlington. Vast improvements have been made since my last visit. The new wing and elegant offices and entrance have been completed. I got the correct measurement of the new conservatory, which some doubters in America would scarcely credit; it is 278 feet long, 123 wide, and 67 feet high, and the whole appearance is excellent.

By great good luck I had a view of the Emperor Fountain in full play. The jet reached 300 feet in height, and seemed joyfully endeavoring to go higher and higher, and overleap itself. The orange house is 180 feet long, 27 feet wide, and 21 high, and has very noble trees in full fruit. Sir Joseph Paxton has erected an Anglo-Italian villa near the gardens, and to those bringing proper introductions, is affable and polite; but do not approach him without the

"papers." I could fill many letters with my notes, but the space I am confined to will not permit. Let every American who visits England see Chatsworth, if he sees little else.

Yours truly,

HORTULANUS.

London, January, 1859.

GRAPES AND GRAPE VINES.—The attention given to grape vines at the present time, is likely to lead to good results. Some years ago, we stated in this journal, that we were on the eve of important discoveries in new varieties; this is now realized, and fortunate possessors of good plants of desirable kinds, are reaping a harvest well deserved by their industry and anticipation of an unsupplied want.

There is a great deal said upon borders, and planting in good soil; enough almost to discourage some timid people who have not the materials at hand, when they would be glad to have a vine on their premises. But no one should be discouraged. We would have everybody possess a grape vine, whether they have one foot of ground to spare or an hundred acres; citizens especially, ought to plant them; there is no particular secret which need discourage any one. We have long known a vine, in a very small city yard, between high walls where the sun scarcely ever reached the root, that was carried to the top of a third story back building, formerly used for the drying of clothes. Here it threw out its beautiful leaves and glorious clusters in such abundance, that the proprietor had the pleasure of annually distributing bushels to his neighbors; one advantage possessed here, was, that it was out of the reach of robbers—the owner kept the key emphatically.

Hoare, in his celebrated treatise on the grape vine, long since enunciated the fact, that preparation of the soil *ensured* the prosperous growth of the vines, and the annual production and maturation of fine crops of grapes, and that this process was highly deserving of being practically adopted at all times when circumstances permit; yet, he assures us, and practice authorizes the belief, that it must not therefore be supposed that vines will not grow and mature fruit, unless planted in well-prepared borders. Quite the contrary is the fact, for vines will do well in "in any unprepared soil that is not too stiff, and that has a dry bottom; but they grow quicker, and consequently bear greater crops of grapes within a given space of time, when planted in a soil that has been properly prepared for their reception.

"If two cuttings be planted," he continues, "the one in a soil of the former description, and the other in one of the latter, it will be found at the end of ten years, that the stem of the vine growing in the soil that was unprepared, will not be more than half the size of the one planted in the other; consequently, for every pound weight of fruit which the smaller stemmed vine can mature, the other will ripen very nearly three pounds. This difference occurring annually, is sufficiently great to repay most amply the trouble and expense of a border.

"Indeed, if vines could not be planted with any prospect of success, in any other situations than in borders set apart for that purpose, but a very small quantity of grapes would be grown compared with what the country is capable of producing and does produce. We have seen barns and outhouses in New England, covered with vines and fruit, where there was no border whatever, and which never, or rarely, received even a winter top-dressing. Various places may be observed in *favorable aspects*, where vines are trained, while their roots possess little or no soil at all on the surface adjoining their sites, the ground around being paved with bricks, or stone, or trodden hard. If the ground in such situations," says our author, and we can vouch for the fact, "adjoining the side of the wall or building, be opened to the extent of eighteen inches square, and as many deep, it will be sufficient to admit the roots of a young vine, which must be pruned to suit the place. If a wider and deeper space can be made, it will of course be better, but if not, *that will do*. Loosen the sides and bottom as much as possible, and fill in with two-thirds of rich, loamy earth, and one-third of road or street scrapings, previously well-mixed together; and if necessary, the surface covering, whether of stone, brick, or otherwise, may be restored again to its former state, provided a space of about six

inches square, be left open for the stem to swell in during its future growth; thus treated, they will generally do well, though not so well as under better treatment. This is wholesome doctrine, and it is true. Indeed, it is hardly possible to plant a vine in any situation, in which it will not thrive, provided its roots can by any means push themselves into a dry place, and the aspect be such as to afford a sufficient portion of the sun's rays to elaborate the juices of the plant. This may be observed when a vine is planted near a deeply-laid gravel walk; through the interstices of the stones the roots travel and perhaps enter the grass ground beyond. They possess an extraordinary power of adapting themselves to any situation, provided it be a *dry* one. They will ramble in every direction in search of food, and extract nourishment from sources apparently the most barren, thriving where almost every other description of plant or tree would starve."

Such is Mr. Hoare's theory, and such thousands may find to be the fact. And yet this is no argument for the neglect of grape vine roots; where space does not admit of a larger border, winter mulching should be resorted to. We would thus advise the planting of the vine in the smallest garden spot—in short, in every spot where there is a chance of displaying the top to the sun and air—even where the sun does not reach more than for a few hours of the hot summer's day; we may calculate upon thousands of tons being produced in cities, which need not be dependent for this fine fruit upon farms in the country. Cities and towns, too, possess another advantage; they *may* grow the foreign kinds to great advantage, both for profit and amusement.

With plenty of light and air, and a little attention, a crop of fine grapes may be had in situations heretofore deemed of no value. And what an enjoyment may be had from the cultivation of a single vine or two! To call into existence and cherish such a beautiful plant, even among pent up walls, gives something of country delights; the amateur may well exclaim with Wordsworth:

"And 'tis my faith that every flower
Enjoys the air it breathes."

DEAR SIR:—An old subscriber wishes you the 'best of success. Go it strong on pears and pear culture, and you will please me. I have a tale to unfold on that subject myself, (not a tale of woe,) but I shall bide my time, and if Jack Frost does not get drunk some night next spring, and stay out too late in the morning, about the last of April I shall see somewhat about pear trees, and perhaps you shall hear. This is the only blight I fear, and it is all that stands between me and success, in the culture of the dwarf pear.

Very respectfully yours,

J. T. C.

DEAR SIR:—I am glad to see we are to have the dwarf pear question fairly considered. To my mind it is absurd to say that all the failures are the result of negligent culture, and that climate has nothing to do with it, when thousands of trees in the West, have been winter-killed within the last ten years.

Truly yours,

A. HUIDEKOPER.

EDITOR OF THE HORTICULTURIST:—South-western Georgia is perhaps the last place from which you would expect a "note" of horticultural interest, and you will therefore not be much disappointed should the following fall short in matter suitable for your journal.

There are a few subjects, however, in your recent issues, on which I would like to comment.

1. As to fruit-tree labels. I have used for some time, simple *roofing slate*, lettered with *white lead*. Could you see one which I have just finished for a row of twenty-five "*Belle Lucrative*," there would be no necessity for eulogium. They are neat, imperishable, ineffaceable, and legible at any "preconcerted" distance, say twenty feet. Farther, they can by no force of neglect, injure the tree; and are, I think, somewhat of a terror to our southern cotton-tail-i-cusis," or rabbit, (next to the little nigger, the insect most injurious to vegetation in this latitude.)

In fact I cannot do *without* a slate label. As for the trouble, I will engage to print *two*, on an average, while my next neighbor is hunting out any given variety in his orchard.

The cost is a trifle, and the lettering a nice amusement for a rainy day, not involving much of what Dr. Johnson calls the "labor of excogitation."

2. As to dwarf pears.

Between Messrs. Allen and Van Buren, the soul of peardom is in no small tribulation.

On reading Mr. Van Buren's note, I instantly turned to an old Vol. *So. Cultivator*, containing the article which he now regrets and retracts. It is therein recommended to plant the dwarf pear so that *the whole quince root shall be six inches below the surface*—literal "pear-i-side."

Shall I tell you that I was misled by that very article, that I did so plant certain pears; or describe the true pomological impatience with which I waited for the fall to come, that I might—take them all up again? They are now planted like the others, the bud barely covered, which I take to be the proper "mean" between Mr. Van Buren's "extremes." Those lifted had not rotted, but are now shedding a ring of outer bark, where they were *choked*.

We would like to have more light on that subject, but certainly "quince" will throw out roots as readily at top as "bottom," and the pear *will* throw out roots if it sees a chance of quietly inearthing them.

3. As to failure among dwarf pears. Mr. Allen's picture has its photographic copies even *here*. But it seems to me that they are the result of a fixed conviction among our cultivators, that the pear and the potato (or other esculent) require exactly the same treatment, simultaneously conducted on the same piece of ground. The legitimate "conclusion" being a cry of "small potatoes," and "dwarf's a humbug!"

The *soil* may stand a double crop, but the year's supply of moisture in this climate, is *not* "enough for two." Then look at the cultivation required by an annual tuber, and fancy the feelings of a "dwarf," as the cold steel goes crushing through its fibres!

I am frequently asked, "what crop is best for an orchard?" and I don't think that I shall ever depart from, regret, or retract, the simple answer, "*Fruit Trees*."

I have even discarded the southern "cow-pea," though it does signally ameliorate fruit lands; but it throws a higher shade than consists with the welfare of the base of a pyramid; and, like other crops, be they potatoes, pears or grass, or what not, it takes its lion-share of that not-to-be-divided moisture, which the air never fails to deposit in properly prepared earth.

I would say that land cannot be too deeply prepared for choice fruit, nor too highly cultivated, or *cropped*. I can show a *perfectly healthy* peach orchard six years old, managed exactly so, with stems as smooth as a nectarine. And Mr. Allen, I think, will envy the compliment paid by a young lady, to my dwarf pears—that "the twigs looked good enough to eat!" But *jam satis*.

F. O. TICKNOR, M. D.

Torch Hill, near Columbus, Ga.

MR. EDITOR:—I noticed in the December number of Hovey's Magazine, p. 557, that a correspondent, Mr. Wilson Flagg, says: "The name of this genus, (the cornels,) is said to be derived from the Latin *cornu*, signifying horn-wood, on account of its great hardness." Was it not derived rather from the branching habit of the limbs, resembling the horns of a stag? Or did both facts suggest the name?

AMATEUR.

From *cornu*, a horn, from the hardness of the wood. Its value as a material for warlike instruments has been celebrated by Virgil—*Bona bello cornus*.

DEAR SIR:—Will you be so kind as to present us with a drawing of the Union Village grape in some future number of the *Horticulturist*, there is considerable interest manifested in grape culture in this section; the Delaware, Rebecca, Diana, and Concord, are to be found in most good gardens here now, and I think the balance of the newer varieties of good grapes would soon be, if you will assist by illustrations of them whenever you think proper; the illus-

trations of the Delaware, Diana, Rebecca, and Canadian Chief, in the back numbers of the *Horticulturist*, have done good service; please to give us all the light you can on the subject; we feel that we need it all.

Yours, most respectfully,

JOHN LOWE.

[We have a series of the new grapes in progress of illustration, which will appear soon. ED.]

DEAR SIR:—As to our 54 varieties of grape vines; we have taken pains to secure every promising sort that comes to notice, as to those “ready to come out” as you say; hundreds and hundreds of seedlings are started, and each parent “crow will think his own young is the whitest.” We are constantly rejecting sorts as unworthy of cultivation, after trying and testing the plants and fruits.

You ask our views of vines:

1. Where Isabella } Best 6. Delaware, Diana, Logan, King, Concord, and Hartford Prolific.
will not always } Best 10, add to the above, Northern Muscadine, Tokalon, Union Village,
ripen. } and Golden Clinton.
2. Where Isabel- } Best 6. Isabella, Delaware, Diana, Logan, Concord, and Tokalon.
la will always } Best 10, add to the above, Union Village, Marion Port, Devereux and
ripen. } Clara.
3. Where Catawba } Best 6. Catawba, Isabella, Diana, Rebecca, Tokalon, and Child's
always ripens } Superb. Best 10, add to the above 6, Senior, Herbemont, Anna, and
well. } Archer.

In fact, where Catawba *always ripens well*, you may plant any sort you please, for *all* will ripen well—only some of the northern “foxes” are not worth planting where better will grow.

You ask about Child's Superb; it is a seedling, from Utica, N. Y. The propagators insist that it is a pure native, and hardy; but the lobing and serrating of the leaves, prove beyond dispute its foreign origin. It is probably an American seedling from foreign seeds. The bunches are large, the berries large and very good; it is prolific; it does beautifully as a wall grape, with slight protection; but does not *need* glass, (here,) although under glass it is magnificent. This leads us to be quite confident that south of where Catawba and Anna will ripen, the Child's Superb will be a capital out-of-door grape.

And about that Anna. We saw a few bunches here that were very fine; but all the clusters on the vine were not. Our experience is that it is a very nice White Catawba, and that it would take a very good judge of grapes indeed, to detect (blindfold) the difference between Anna and Catawba, by taste.

Very truly yours,

C. P. BISSELL & SALTER.

FRUIT-GROWER'S SOCIETY OF WESTERN NEW YORK.

[Reported for the *Horticulturist*.]

This Association held its Annual Meeting in the Court-house, at the city of Rochester, from Wednesday, 5th of January, at 11 o'clock A. M., to Thursday, at 1 P. M.

After organization, and while the Committee on subjects was preparing its list for debate, the question as to ripening winter pears was discussed for a few moments, and it was universally admitted that we need more information as to how to perfect the fruit on the tree; how to produce good and mature fruit by careful cultivation,—than how to make a good pear out of a poor one, by any process of ripening. When fruit of good quality is obtained, the difficulty of ripening is not so great as it is supposed to be.

Judge Langworthy introduced the question, which was subject 5, at the meeting in June, 1858, and very interesting remarks were made by many members, as to the relative advantage of the fumigating process; the pig and chicken cure; the sheet and shaking process; and the asafetida and tanner's oil remedy, for the curculio pest.

Mr. Ainsworth, of Ontario, by employing this last remedy, had his trees loaded with fine plums for one season; but next year the trees were as dead as the curculio. The only reliable remedy is the sheet and jarring process, thoroughly attended to. Prof. Coppock, of Erie Co., raised at the rate of four bushels to the tree by its aid. Mr. Barry, of Monroe, raises from 50 to 60 sorts of nice plums in this way.

Mr. H. P. Norton, the President for 1858, who declined a reelection, delivered the annual address, a copy of which was requested for publication.

The following officers were elected for 1859:

President,—B. Hodge, of Buffalo. Vice Presidents—J. J. Thomas, Union Springs; W. Brown Smith, Syracuse; Prof. W. R. Coppock, Buffalo. Secretaries—C. P. Bissell, Rochester; Jno. B. Eaton, Buffalo. Treasurer—W. P. Townsend, Lockport. Executive Committee—P. Barry, Rochester; J. J. Thomas, Union Springs; C. L. Hoag, Lockport; W. B. Smith, Syracuse; Joseph Frost, Rochester.

The Committee on Subjects reported as follows:

Cultivation of Apples—1. How many varieties should be embraced in an orchard of 1,000 trees, to secure the largest profit of orcharding in western New York?

2. Which are the most profitable varieties for an orchard of 1,000 trees?

Cultivation of Pears—3. Which offers the surest and greatest profit in extensive orcharding; autumn, or winter pears, or both?

4. How many and what varieties should be embraced in an orchard of 1,000 trees, to insure the greatest degree of success and profit?

The following questions apply to the cultivation of both apple and pear:

5. What season, fall or spring, is most advantageous generally, for planting extensive orchards?

6. What is the most favorable condition of soil, both as regards quality and previous cultivation?

7. Is the application of manures or compost necessary at the time of planting, and if so, what kind?

8. How often, and in what quantities, should manure be applied to orchards to secure the best results, both as to tree and fruit?

9. What are the advantages or disadvantages of root-grafting, in comparison with seedling-stock grafting, with reference to growth, durability, and productiveness?

10. What process of manuring, if any, is best adapted to the pear and apple, after coming to the period of producing fruit, and what depth to plant them?

11. What period of time is required to perfect the fruit bud, from its first inception to its ability to produce blossoms?

12. What is the experience of this meeting as to the present or final result in the success of dwarf pears?

Grapes, &c.—13. Is grape culture, for wine, profitable north of the latitude of New York city? If so, what varieties will make the most and the best wine to the acre?

14. Which grape juice becomes good wine with least care, attention and expense?

15. What sorts of grapes are best to grow for other than wine purposes, north of the latitude of New York city, i. e., best as to their productiveness, hardiness, and time of maturity.

Questions 1 and 2 were, by vote of the Society, discussed together, and the Society, after full debate, balloted with the following result: 2 members voted for all Baldwins; 5 members voted for 500 Baldwins and balance made up of Rhode Island Greenings, Roxbury Russets, Northern Spy, Twenty Ounce, and Talman Sweet; while the remaining were for from 200 to 400 Baldwins, each voter making the number up to 8 or 900, from the above-mentioned 5 varieties, and filling in the balance of the 1000, with some particular favorites of the voter.

Question 3. The preference was given most decidedly to autumn pears.

Question 4. Was not balloted upon, although the debate upon it and the information given, were exceedingly interesting. Some of the statements were as follows: Prof. Coppock had for the past eight years, sent more pears into Buffalo market than any six other fruit-growers, and had altogether better results from pears on quince than from his standard trees. Said he, "had I planted standards alone, I should have had no 'surplus of fruit.'" It was universally acknowledged that some varieties which are finest on quince, are worthless as standards. One gentleman realized \$262, cash, for the pears from 160 dwarf trees in one year. Some standard Virgalieus, in Ontario Co., did well. From a single standard tree, 3 barrels sold at \$22 per barrel! A standard Virgalieu on Judge Howell's place, in Canandaigua, had not failed of a crop for forty years, and for twenty years has averaged twenty bushels a year, selling at an average price of \$3 per bushel. Mr. Finlay averaged two barrels to the tree, at \$16 per barrel. As to how many and what varieties, the important thing is to start right, with good sorts and with a few sorts.

Question 5. Far more depends on the after treatment of the tree than upon the time of planting, and trees can be safely transplanted at any time from October to the last of April, if the ground is not closed by frost, provided the soil be properly prepared before-hand, and suitable attention be bestowed upon the trees afterward. More depends upon the after treatment of the tree by the cultivator, than upon the time of planting.

Question 6. Thoroughly cultivated; deeply cultivated. Of course, no one will set out a pear orchard, or any other orchard, on an ill-drained piece of land.

Here the suspension of the rules was moved in order that a substitute for questions 13, 14, and 15 might be introduced and discussed, as follows: *Grapes*—what are the best and most profitable varieties or variety, for general cultivation for market and wine? best distances for planting? preparation of soil and manner of training, trimming, and cultivating? kind and form of trellis? curing and marketing the fruit, and profit per acre, to the successful grower, for market and for wine?

This subject covers a large ground, and was very fully discussed. Any land that will grow first-rate corn, will grow good grapes; but it must be cultivated deep, and be well drained. The best soil is dry and warm; protected by woods, or in some way from cutting winds; worked twenty inches deep, and made rich with manure, swamp muck sometimes.

Yearlings with plenty of roots, are safest planting, and having finer and more fibrous roots will produce in the third year as much as if they had been two years old when set out. They should be trimmed back to three buds. Cultivators of Isabella grapes spoke of net proceeds per acre, after the vines have come into full bearing, as more than \$1,500 per acre; but this is under a high system of cultivation.

Others spoke of their gross receipts as \$1,500 per acre.

Dr. Farley, of Cayuga, from five acres of Isabellas, about seven years of age, netted over \$500 per acre; but as to the *best* variety, Diana, to my taste, is superior to the Delaware or Rebecca, and I had rather eat a half ripe Diana, than the best Isabella I ever saw. That the Diana is the most valuable grape that we have, is perfectly clear to my mind. Concord is very fine, and ripens its fruit fully two weeks earlier than the Isabella; is almost as good as the Isabella, and holds its fruit well after ripening.

Dr. Miner was full in the faith of Diana being one of the best grapes that we have, both for abundance of bearing, and for the table. Wherever Isabella will not ripen fully and well, Concord is *very* valuable.

Mr. Ainsworth's vines are planted 12 feet apart each way, and produce the third year from 10 to 20 pounds per vine. Mr. A. washes his vines each spring with soap-suds, applying it with a brush.

Dianas are very sweet, without much pulp, and in the language of a member, "perfect bags of juice;" they consequently promise to be most valuable as wine grapes. Specimens of Clinton wine were exhibited, which strongly resembled good Port. This Clinton wine requires rather high temperature part of the time, during its fermentation.

Question 7. Mr. Hooker would not put manure in among the roots; but after the tree is carefully planted, spread the manure on the surface of the ground around the tree, being careful not to touch the bark. The rain will carry the soluble portions to the roots of the tree, and in drouth, the insoluble portions act as a mulching; both being much to the benefit of the tree. Mr. Boardman once put a heavy coat of manure on a lot, and ploughed it under before planting his trees, and three-quarters of the trees died. Fresh manure under trees universally kills them, and whenever or wherever applied, it must not come in contact with the roots.

Question 8. The land where trees are growing should be in good heart, and should be kept so; for it is just as clearly a benefit to the farmer for him to feed his trees well, and to keep them fat, as it is to fodder a calf, or to keep his stock in good order. "How often and in what quantities" the manure should be applied, must vary with the varying necessities of each piece of land.

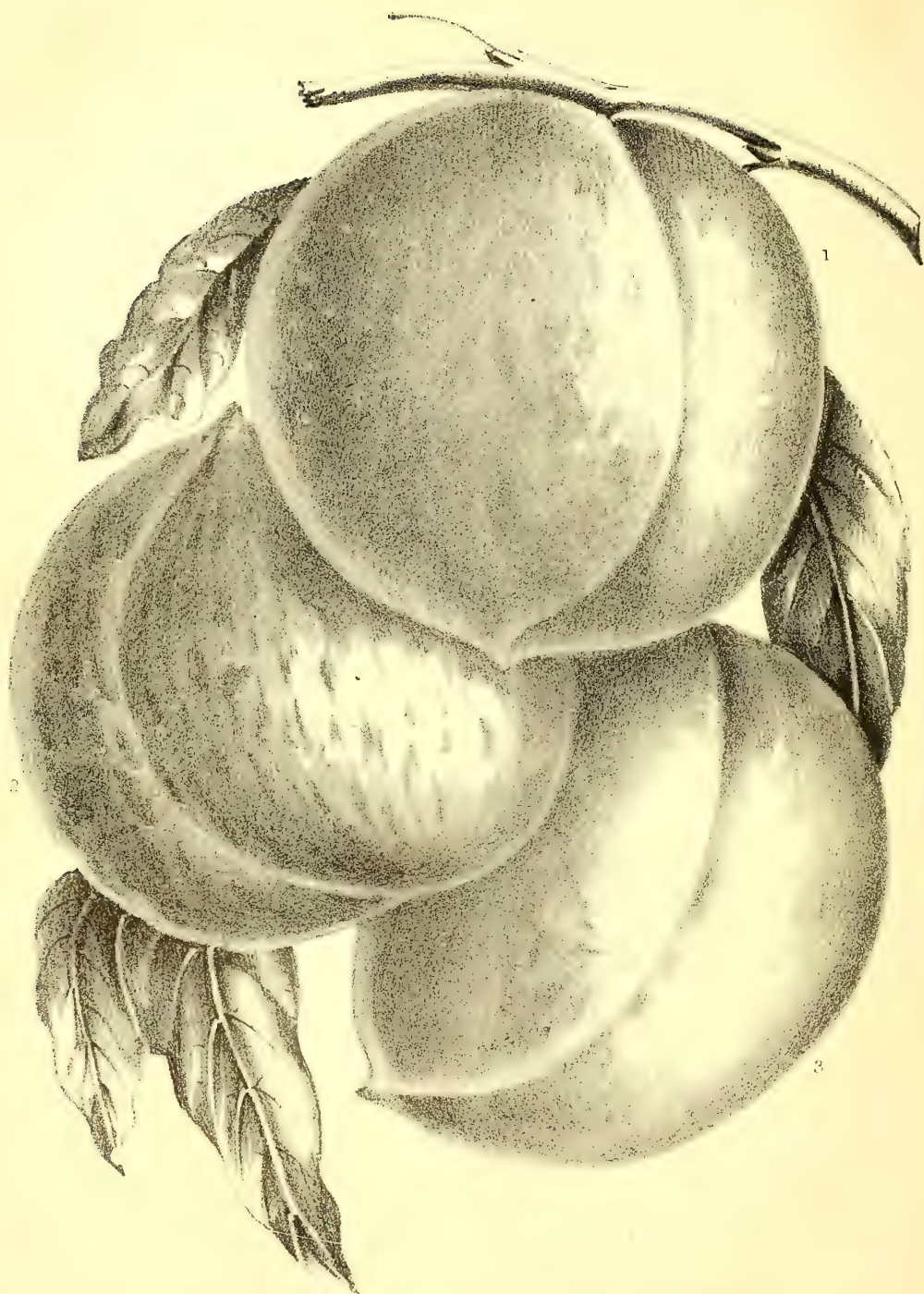
Question 9. "Prof. Comstock's" theory as to the collar of the plant being the seat of its vitality, is now wholly exploded. All grafting should be the "seedling stock grafting." The roots of old trees are not advisable to use; but a seedling stock can be divided into two or more parts, and used with success in grafting scions. No difference is perceptible as to "growth, durability, or productiveness."

Question 10. Apply the manure in any way, so that its soluble portions may be taken up by the roots in due season. Apply to a large area around the tree. By no means allow any fresh manure to come into direct contact with any of the roots. Where stable manure is not readily accessible, the ploughing in of a crop of green clover is as beneficial, as was stated when discussing question 6.

Mr. Smith moved that the next meeting be held at Rochester, which motion prevailed.

This meeting was the largest ever held by the Society; there being seldom less than two hundred present at any time.

During the sessions, practical illustrations of the best mode of pruning dwarf and standard pear trees; as well in the nursery rows, as at the time of transplanting and when bearing fruit, were given by Messrs. Yeomans and Barry. The meeting at this point became quite colloquial, and hardly a member but had some questions to ask of the gentlemen who held the tree and pruning-knife. This subject of pruning is a very interesting one, and one upon which few are so perfect as not to be able to learn something.



1. TIME THE WORLD TO COLUMBIA

CHANGAE (OR) CHINESE CLING

Illustration by J. H. W. 1892

Life in the Country.—Neatness.



If we have, in former pages, descanted rather largely on the importance of having a pursuit in a retirement to the country, it has been from a conviction of its absolute necessity for permanent enjoyment. What that pursuit, should be, will depend very much upon individual taste and previous education. But every one can have a fancy for, and pursue, *Neatness*. An agreeable writer of eminent talent, runs on somewhat after this fashion. I counsel you, my friend, if you are ever disheartened about some example which has been pressed upon you, of the evil which is in this world ; if you get vexed, and worried, and depressed, about some evil in the government of your country, or of your county ; if you have done all you can to think how the evil may be remedied ; and if you know that further brooding over the subject would only vex, and sting, and do no good ;—if all this should ever be so, then I counsel you to have resort to the great refuge,—*Tidiness*. Don't sit over your library fire, brooding and bothering ; don't fly to sugar-plums, or wine,—they will not avail. There is a corner of one of your fields that is grown up with nettles ; there is a bit of wall or fence that is out of repair ; there is a yard of the edging of a shrubbery walk out of order ; there is a bed in the garden which is not so scrupulously tidy as it ought to be ; or there is a drawer of papers which for weeks has been in great confusion ; or a division of your book-case, where the books might be better arranged. See to these things forthwith. The out-of-door matters are the best. Get your assistants and go forth and see things made tidy ; and see that they are done thoroughly ; work half done will not serve for our present purpose. Let every nettle or mullein be cut down and carried off from the neglected corner ; then let the ground be dug up and levelled, and sown with grass seed ; it will make the seed take root at once. Let the wall or fence be made better than when it was new ; let a wheelbarrow of fresh green turf be brought ; let it be laid down in place of some decayed point ; let it be cut accurately as a watch's machinery ; let the gravel beside it be raked and rolled ; then put your hands in your pockets, and survey the effect with delight.

All this will occupy you, interest you, dirty you, for a couple of hours, and you will come in again to your library fireside, quite hopeful and cheerful. The worry and depression will be entirely gone ; you will see your course beautifully : you have sacrificed to the good genius of *Neatness*, and you are rewarded accordingly. This is simply to state a phenomenon—a fact—and not to explain *causes*. To put things *right*, and to know that things are put right, has a wonderful effect in enlivening and cheering. You cannot tell why it is so ; but you come in a very different being from what you were when you went out. You see things in quite another way. You wonder how you could have plagued yourself so much before. We all know that powerful effects are often produced on our minds, by causes which have no logical connection with those effects. Change of scene helps people to get over losses and disappointments, though not by any process of logic. To most ordinary people as well as extraordinary, neatness is a con-

stant source of temperate satisfaction. It is upon record, that a certain ancient emperor who had ruled the greatest empire this world ever saw, found it a pleasant change to lay the sceptre and the crown aside, and, descending from the throne, to take to cultivating cabbages. And as he looked upon the tidy rows and the bunchy heads, he declared that he had changed his condition for the better; that neatness in a cabbage-garden could make a man happier than the imperial throne of the Roman empire. It is well that it should be so, as in this world there are many more cabbage-gardens than imperial thrones; and tidiness is obtainable by many by whom empire is unattainable.

A disposition towards energetic neatness is a perennial source of quiet satisfaction. It always provides something for us to think of and to do; it affords scope for a little ingenuity and contrivance; it carries us out of ourselves, and prevents our leading an unhealthy, subjective life. It gratifies the instinctive love of seeing things *right*, which is in the healthy human being. And it is founded upon the philosophical fact, that there is a peculiar satisfaction in having a thing, great or small, which was wrong, put right. You have a greater pleasure in such a thing, when it has been fairly set to rights, than if it never had been wrong. And the human being who systematically keeps right, and sets right all things, even the smallest, within his own little dominion, enjoys a pleasure which has a dignified foundation—which is real, simple, innocent, and lasting. We cannot, from the make of our being, be always or be long in an excitement. Such things wear us and themselves out, and cannot last. The real and substantial happy people of this world are always calm and quiet, at least after the hey-day of youth is passed.

But though the excitements of youth be gone, there still remains to the middle-aged the calm pleasure of looking at the backs of the well-arranged volumes on his book-shelves; of seeing that his gravel walks are nicely raked and rolled, and his grass-plots smoothly mown; of having his carriage, his horses, and his harness, in scrupulous order. Now, all these little things will appear little only to very unthinking people. From such little things comes the quiet content of common-place, middle life, of matter-of-fact old age; and from this partly-borrowed little essay, some thinking reader, somewhere in this great country, may devise a pursuit even if he has none already, and resolve henceforward that his whole domain shall be a model of neatness, tidiness, and order. And if he is possessed of a hobby already, let him mount this also, and our word for it he will be the happier.

STUMP THE WORLD PEACH.*

A NATIVE of New Jersey, well adapted to the South, where the tree grows vigorously and healthily, and produces the very finest crops. As I never had occasion to taste it in New Jersey, I can only give the result of my experience in South Carolina and Georgia. In the specimen garden of W. N. White, our eminent southern pomologist, in Athens, Georgia, I had occasion to see one of the finest trees of this variety, loaded with a splendid crop of large peaches. It proved to be a most luscious, as it is a most beau-

* See Frontispiece.

tiful fruit. Some found it not highly enough flavored, which is not surprising in a land where so many of the very best peaches are common, and where every taste can be gratified by different flavors and aromas. But, on the whole, I found it a most desirable fruit, and well deserving a special attention. Its size, shape, color and fertility, are high recommendations enough, even if the fruit were not first quality, but that is not the case. I found it equal to any of our best varieties. Fruit round, obovate, regular in shape; highly colored, and melting; skin woolly, peeling easily; stone rather small and free; ripe, end of July, in Georgia.

L. E. BERCKMANS.

COLUMBIA PEACH.

THIS luscious fruit forms quite a distinct group among the family of the peaches. Its color and peculiar flavor are well-known in the South, where it is a general favorite.

The original tree, although now over twenty years old, is still growing and bearing.

It stands on the farm of Mr. McAlpin, near Augusta, Georgia, where I found also four seedlings of the old tree, now in full bearing, two of which are superior to the parent in size and quality, although retaining all the original and peculiar features of the old Columbia;—a fact which, coupled with other experiments, renders it evident that this variety or group has a great tendency towards reproducing itself from stones. The tree is a fine, tall grower, very productive, with medium leaves of a deep green appearance. The fruit is large, waved, marbled and striped, with dull brown upon a yellowish ground; very woolly, and once known, never to be mistaken. Its flesh is firm; deep yellow-orange, melting, spicy, vinous; with a peculiar aroma of the highest character. Stone free, moderate in size; while one of its progenies has a stone not larger than a large plum stone, and so free that it only adheres to the fruit by two or three ligaments at its base.

The season of the Columbia is about from the end of July throughout August. The above-mentioned seedlings are later by six or ten days at least. Charles Downing, in his most valuable revised edition, states "that the Columbia was raised from a stone brought from Georgia, by Mr. Coxe;" either this proves that the variety is a free reproducer of its own species, or that Mr. Coxe, instead of a stone brought a tree or a scion from Georgia;—there being no doubt as to the identity of the old parent at Mr. McAlpin's.

L. E. BERCKMANS.

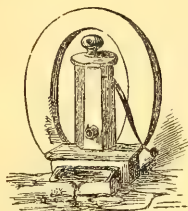
CHINESE CLING PEACH.

ONE of the best and handsomest among the clingstones. Fruit large, oval-pointed, with a white crimson-tinged woolly skin; very conspicuous. Flesh white, very fine, slightly colored with pink around the stone; juicy, and for a clingstone, very tender and melting. It ripens well—has a most delicate aroma. For those who prefer clingstones,—and their number is not small,—this fruit has proved to be a fine acquisition. It was obtained from a stone sent from China. Charles Downing says that it was *imported* from China, but he does not state whether it was imported as a tree or as a seed. The general opinion is that it was imported as a seed, and fruited in Georgia or South Carolina, for the first time.

L. E. BERCKMANS.

FRUIT-GROWING IN VIRGINIA, &C.

BY YARDLEY TAYLOR, LOUDON CO., VA.



NE of the most important efforts of the American Pomological Society, has been to ascertain what varieties of fruit are suited for general cultivation, and what varieties for special localities. The list recommended for general cultivation has been objected to in some of its varieties in particular localities; and attempts were made at the late meeting of the Society in New York to have the list corrected. The fact was admitted, that most of the varieties recommended might be objected to, in a few places in our widely extended country, with its difference of soil and climate; yet as they were so generally adopted, it was thought best to let them stand at present; still it was acknowledged that the time was coming when it would be proper and right for the Society to prepare a list for every prominent section of our country. It was thought that the Society did not at present possess sufficient data to make such an one now, but that at some future time it would be able to do so, with the information it was yearly acquiring.

There are a number of influences operating to effect the profitable growth of fruit in our varied soil and climate. Some varieties do best in a strong clay soil, particularly if of limestone origin, while others thrive best in one of more sandy texture. Elevation has a very important bearing on temperature, as well as the vicinity of large bodies of water. It is said that the immediate vicinity of the Hudson river, the south shore of Lake Ontario and Erie, as well as the numerous lakes of western New York, are favorable places for fruit-growing, the temperature being there modified so as to be seldom injured by spring frosts. The ranges of mountains, running as they do from northern Alabama through all the states to the British possessions of Nova Scotia, seriously affect the temperature of the States through which they pass. Virginia, for example, on her southern border, can raise cotton, while on her northern mountain valleys they have to cultivate an early variety of corn, similar to what they raise in New England. The lines of equal temperature are very different from the lines of latitude. It is fair to presume that the same kind of fruit would succeed in all localities where there was a similar soil, and the summer temperature was the same. This is a view of the subject that must be looked into, before we can prepare a list that will suit any extended region of our country.

In the patent office report for 1856, is a rather lengthy article from Professor Henry, of the Smithsonian Institute, on meteorology, accompanied by a map, showing lines of equal temperature across this continent. These in some instances vary greatly from latitude: for instance, the line of the average summer temperature of 70° crosses Long Island, and runs north to Albany, then turns west to Buffalo, to Detroit, to Milwaukee, then crosses the Mississippi river above the mouth of the Wisconsin, then pursuing a north-western direction to the upper branches of the Missouri, in latitude 49° , crossing the Rocky Mountains and down the Columbia river to below its main forks, then turns south down the coast nearly parallel to it, to lati-

tude 34°, before entering the Pacific. The line of the average winter temperature of 30° crosses Long Island at about the same point, then direct to Lake Erie, then south-west to the southern line of Iowa, then to Council Bluffs, then north-west, and reaches the Pacific far north of the limits of the United States. These observations show a remarkable uniformity of temperature on the western coast, while on our eastern coast the extremes of temperature are great.

These lines, however, representing that temperature, supposes the level of tide-water, and to bring any point to its actual temperature, we must make the allowance due to elevation. This allowance is estimated at one degree of Fahrenheit's scale, for every 333 feet of elevation, or 3° for 1000 feet. By knowing the elevation of any section, we can then approximate very near to its temperature.

Let us apply these principles to Virginia, and ascertain, if possible, what are her prospects for fruit-growing. This State is divided into four prominent features, as regards her physical geography. First, the tide-water region, reaching to the head of tide on her principal rivers; second, the Piedmont region, reaching to the Blue Ridge; third, the valley section, reaching from the Blue Ridge to the Alleghany Mountains; fourth section, all west to the Ohio river. In regard to fruit-growing, I propose to divide the State somewhat differently. First, to include the tide-water region, and about one-half of the Piedmont region, as being very similar in soil and elevation; second, the western half of the Piedmont region, being more elevated, and that part of the valley between the Blue Ridge and the North Mountain, or the great limestone valley. This second division includes a belt of the best farming lands in the State; third domain, to extend from the western edge of the limestone valley to the western slopes of the Alleghany mountains. This is a high mountainous region, with narrow valleys of excellent land; fourth, all of the State west of the mountains sloping to the Ohio river.

Here, then, are four distinct divisions, with very different elevation. Very little of the first division has an elevation of 400 feet above tide. The second reaches from 400 feet to 1500 feet, leaving out the mountain ranges, which often rise from 300 to 700 feet above their immediate base; and in some instances, much higher. The Peaks of Otter are 5000 feet above tide. In the third division, the valleys in the immediate vicinity of the Potomac and James rivers may be estimated at say 700 feet above tide, and then up to 2500 feet, or perhaps near 3000 feet in some of the higher valleys. Many of these valleys are limestone land, and of excellent quality, while most of the mountains are of poor quality of soil. The fourth region slopes to the Ohio, and we might suppose it equally well adapted for fruit-growing, to similar situations of soil and elevation in other parts of the Ohio Valley.

Here, then, are four distinct sections, each having its own peculiarity of climate, arising principally from difference of elevation. At Norfolk peach trees will be in bloom earlier than at Richmond, and at Richmond earlier than at Alexandria; at Alexandria earlier than at Winchester, and at that place earlier than in the mountain region;—from four to six weeks difference between the two extremes. Hence, an apple, for instance, that would ripen late enough to make a good winter fruit in the tide-water region, would not ripen at all in the mountain region, where the growing

season was from one to two months shorter, while a winter fruit of the mountain would be a fall fruit if removed to tide-water.

These facts being beyond doubt, to all who have carefully examined the subject, show the necessity of a proper selection of varieties to suit the conditions of each section. As a general thing, apples suit best in their native region, but in this State there has been so little attention paid to pomology, heretofore, that we have not a full supply of native fruits, and are obliged to avail ourselves of varieties from other places. With proper discrimination this will answer very well. Take the Newtown Pippin as an example : its origin was Long Island, and there the summer temperature is 70° average ; plant this at Norfolk, where the temperature would average 75° , and the season of growth a month longer, and it is easy to see it could not make a winter fruit there ; it would ripen too soon. But take it to the mountain valleys of south-western Virginia, near the same latitude, where the elevation of about 2000 feet would reduce the summer temperature as low as that of Long Island, and we might expect it to flourish, on proper soil.

The nurserymen of eastern Virginia should look to the south-west to obtain valuable varieties for the tide-water region. The Cherokee and Choctaw Indians, formerly residing in northern Georgia and Tennessee, planted seedling apple trees largely ; and out of so many we might expect to find some that were valuable. Pomologists have latterly been selecting such as were valuable, and, it is said, have obtained some really excellent varieties. These originated in an elevated and mountainous region, well adapted to fruit-growing, and consequently would suit more northern localities, particularly of less elevation ; such as the tide-water region of Virginia. Most, if not all of them, except the very latest, would be likely to suit the region on both sides of the Blue Ridge. In this last region the apples of New England do not generally succeed, while those that have originated in New York do better. The New England fruits might suit the mountain region better, but it is wisdom in us to look to our native fruits as much as possible. The Newtown Pippin and Bellflower, and such as originated south of New York, do well in the valley of Virginia, and in the upper Piedmont region. Splendid specimens were exhibited at Richmond and Petersburg, at the late agricultural shows. The Yellow Newtown Pippin has been cultivated in Albemarle county, and sold in the Richmond markets as the Albemarle Pippin. In this region, heretofore, we have had no cheap transportation to our large cities, consequently no large orchards have been planted for market purposes, and with many the value of fruit is not sufficiently estimated, even for their own use. But the exertions latterly made by pomologists is awakening up many to see things in a different light from what they have seen them, and the time is not far distant when orchards will be planted to supply distant markets. The opening of railroads is giving access to markets not heretofore available, and will do much to promote fruit-growing.

Taken as a whole, most of our State seems well adapted to the growth of fruit trees ; there is, however, one draw-back,—our climate is so unsteady in the spring. Situated as much of the State is, sloping to the Atlantic, and within the influence of the warm air of the Gulf of Mexico, a few days of wind from that quarter in the spring pushes vegetation forward and causes early bloom, when a change from the north-west causes frost, and sometimes

cuts off the prospect for fruit entirely. The more hilly parts succeed the best; there vegetation is not quite so early, and low grounds sometimes suffer severely, while more elevated spots are uninjured. The whole of the country east of the Blue Ridge, is favorable to the growth of the peach tree, and the quality of the fruit is superior to that of the North. In the great limestone valley the peach does not seem to succeed so well, but here the apple grows finely. In the northern part of this valley there is an elevated ridge known as "Apple Pie Ridge," so called from the success with which apples grow there. New York and other cities are now supplied in part from eastern Virginia, in peaches and early fruits, and there is little doubt that this business will be extended, as quick as cheap transportation is opened. Indeed, I do not see why our mountain valleys might not produce the Newtown Pippin, for example, as successfully as the valley of the Hudson river; we can find as good soil and probably about the same summer temperature; and with equal cultivation, we ought to be as successful. My acquaintance with northern grown fruit is not extensive, but I have seen finer specimens of Newtown Pippins grown here than I have ever seen North. Energetic nurserymen and fruit-growers have commenced operations in different parts, and their success will stimulate others, so that in twenty-five years we may calculate on a great change as regards fruit-growing in Virginia.

DIOSCOREA BATATA.

BY F. HOLLICK, M. D., STATEN ISLAND, N. Y.

As I gave you last year an account of my experiments with the new roots, and as I have since experimented further, I thought you and your readers might be pleased to know the results.

This last spring I divided my stock of roots into nearly 600 sets—most of which were very small and weak, owing to the division being pushed a little too far to increase the number. Most of these sets were planted one foot apart, each way, in a plot of ground dug three spades deep the previous fall, and with well-rotted manure laid in the trenches. At the time of planting the earth was only loosened up one spade deep. Time, 23d of March.

The balance of the sets were planted in ground dug equally deep at the time of planting, but with no manure. The result is about as follows: average weight from each set, about one pound and a quarter, mostly in single roots of that weight, but sometimes two or three roots;—the product from the plot not manured being the best! Many of those on the manured part never struck below the first layer of manure, but grew clubby, or in bunches, like potatoes. The average depth to which those penetrated which seemed to grow naturally, was two feet three inches. From this any one can calculate the product per acre.

In regard to the quality, I can only say that I prefer it to the potato, or any other similar vegetable, and should always grow it if only as a luxury.

The sets, as before remarked, were very small, and probably on that account were later in starting, and grew afterwards less vigorously; excepting a few of the larger ones, they scarcely appeared above ground till the first week in June, and some not till July.

As an experiment, one whole root was planted, which weighed one pound, and measured twenty-three inches long. It was stuck upright in the level ground, and the earth then heaped around it till covered, making a conical hill. This one started to grow at once, and by the second week in April had thrown up a vigorous shoot a foot high. A pole twenty feet high was placed in the hill, up which it began at once to climb, and by the end of July reached the top, and soon fell over, and matted together in a thick mass of leaves and runners. In August, it was covered with blossoms, in the axils of the leaves, and I hoped for seed. In place of seed, however, the blossoms were succeeded by small tubers, about the size of a large marrowfat pea. I gathered over 500 of these, and lost probably two or three hundred more, from this one plant.

On digging this root up in the fall, I found proof positive that the *Dioscorea* does *not* live, and continue to grow, more than one season. The old root was dead and withered, but from it had grown quite a bunch of other roots, weighing altogether over four pounds.

None of the others, from the small sets, bloomed at all, but produced abundance of tubers in the axils, though nothing like to the whole root. A few special manures were tried, but none of them with marked effect except wood ashes. The row to which this was applied was most certainly the best.

The result has shown me that if we plant sets they must have some bulk, and that the best part of the root to plant again is the thin end, especially if it have the very top, from which the growth begins at once. The small tubers, from the axils, are perhaps even better to plant. We can, therefore, consume the whole of the roots, excepting the thin top ends, which make good sets, and thus have an equal number of sets the next year again. And besides this, each plant will produce from ten to twenty tubers for sets,—or, as in the case of my large one,—even hundreds of them, each one of which will serve as a set again. In point of propagating power, therefore, the *Dioscorea* is all we could wish.

I have heard of results equal to ten to twelve pounds to the plant, and of roots weighing from five to twelve pounds or more, but I have not seen any of these. And here let me remark, Mr. Editor, that the *Dioscorea* is in no way indebted to its friends and introducers, so far as I have seen, for any progress it may have made. I can find plenty of reported results from these men, which look very encouraging, but no details of the process by which said results were arrived at. The gentleman who averaged his twelve pounds to the plant, says it was done by ordinary cultivation. This, however, is very indefinite. If he reads the *Horticulturist*, I should be glad if he would inform me, and other readers, what he means by ordinary cultivation. What kind of soil did he plant in? Did he manure? and if so, with what? What distance did he plant apart? What kind of sets did he use, and what time did he plant? There must have been something very different in his treatment, or soil, from mine, to produce such different results, and I should like to know in what that difference lies. Gentlemen with the large roots, let us hear from you how it was done, circumstantially!

I am much pleased with the *Dioscorea Batata*, and are very desirous of seeing it succeed. Its excellent quality, beautiful appearance when cooked, and perfect hardihood and freedom from disease, speak strongly in its favor; but it is certain that, at present, its cultivation is not so success-

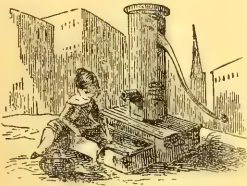
ful, generally, as could be wished, although it possibly may become so, and I sincerely trust it will.

In conclusion, Mr. Editor, let me, through your columns, plead so far in its favor as to recommend further experiments, in different ways, and in various localities ; and let them be duly set forth, in such a way that we can see the causes of success or failure. For the purpose of aiding in this work I enclose you a number of the tubers, which I shall be glad if you will distribute, in small parcels of a dozen or so, to different points, among those of your correspondents who might not otherwise get them, and who will carefully and honestly experiment with them, so that we may know the result next year.—[We shall be most happy to do so.—ED.]

This much I can advise : plant as early as possible, in deeply dug, light soil ; keep free from weeds, and let them grow till the frost kills the vines. Possibly further south, where the season is longer, they may do much better than with us. But mind, when digging them up, to reach the bottom of the root. You may have to go three feet.

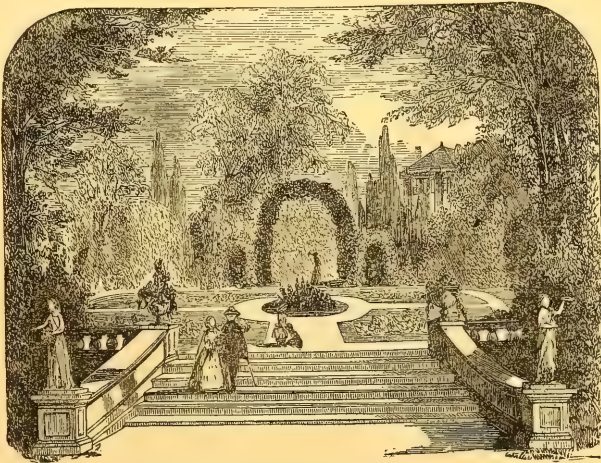
ANOTHER PLEASING SCENE.

BY A. W. D., MONTREAL, CANADA.



In addition to the scene so well engraved in your January number, I send another from "Rustic Adornments."

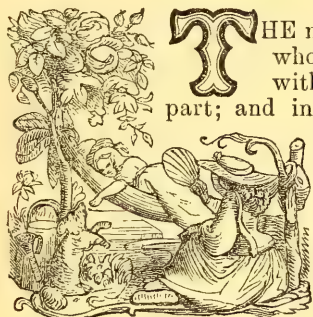
From a second or lower terrace, let the paths lead over lawns sprinkled with evergreens, flower-beds, and avenues of deciduous trees. Converge the paths so that every slope forms a separate scene, complete in itself, when so contemplated, and yet forming a part of the whole.



At every opening point of the shrubberies, you may place some object to arrest the eye ; a statue, a pile of rock, a fine lemon tree in a tub, a trained

pyrus, or a weeping ash, to form a distinct object on the sward, or on a border beyond the path. A fountain added, and you will have a noble addition to your home scene. Happy those who have declivities like those of our noble *Mont Real*.

PENCILINGS BY A POMOLOGIST.



THE novelist who draws his characters and incidents wholly from imagination, and embellishes his tale with the creatures of a vivid brain, acts but his part; and in proportion as his incidents are novel, and his recital natural, so will he rank in the world of letters. Even the modern historian, though he write for the sober Anglo-Saxon, and describe the manners of those once seated on the British throne, and the courtly customs of the age which he professes to portray, may occasionally decorate his pages with a flight of fancy, soaring into the imaginative world, plucking here and there

a flower, to incorporate in the wreath which he is weaving.

Alas ! that a single blossom should bear a thorn, or that the historian, in seeking to "point his moral or adorn his tale," should sometimes tinge the laurel which binds the brow of the virtuous and venerated. He, whoever he be, who writes for the *Horticulturist*, is bound by sterner editorial rule, and must restrain himself within a narrower sphere, else he may read the expressive admonition, "Arborator should confine himself to facts; mere speculation is not suited to our pages." Enough by way of introduction; let us to our pencilings.

On a day towards the close of August, 1735, there were assembled a small company of neighboring gentry, at the residence of one of England's aristocracy, whose broad acres, which lay around the baronial mansion, had been transmitted in an unbroken line since the days of William the Conqueror, given in reward for services rendered that most successful fillibuster. On either hand was evidence of refined and elevated taste;—noble trees with widely-extended arms, the growth of centuries; statuary in immediate proximity to the house; and in the distance herds of deer are reposing in conscious security, or feeding on the emerald grass, so peculiar to the English landscape. The mansion itself was of varied order and irregular outline, indicating, as was the fact, its erection at several widely separated periods; on one of the gables could be observed, in distinct figures, 1560, showing that it, at least, had been erected during the reign of England's virgin queen. Another gable, which bore the date 1630, with a C, surrounded by a halo of rude brick work, told clearly of the days of Charles I., and that the baron of that generation was a gallant cavalier.

The dinner to which the guests had been invited had been discussed with the hearty good will of English country gentlemen, and the dessert, which principally consisted of the various fruits of the season, had with the removal of the cloth been placed upon the table—the signal for freer conversation than had been permitted by the severer duties which had preceded.

With our limited notes it is difficult to determine all the topics of their "table talk;" we be may sure, however, it was not of steam, either as applied to arts or navigation; it was not of railroads, with the engine snorting and puffing in its onward course; nor was it of the electric telegraph, rivaling the lightning's speed, and binding together the extremes of earth by an attenuated thread, more potent than all the cables of the world. Such probably would be among the topics at the present day, for they were men of cultivated minds, alive to every subject of public interest; but at the period of which we write, the great book of natural science and of physics had been but partially unfolded. It is true man's wonderful discovery was made; the philosopher of Wootsthorpe had already given to the world, in his *Principia*, the result of his profoundest calculations; perhaps these were among the subjects of discussion:—or they may have been of literature: the stars of Johnson, of Goldsmith, and of Garrick, had not yet risen, and Fielding, Richardson, and Smollett, were still almost unknown,—but the great delineator of man's feelings, impulses, and passions, had lived, and though dead had left behind his immortal record; and a glorious galaxy, among whom Addison and Steele shone brightly, had shed its lustre on English letters. It is an axiom ever true as the needle to the pole, that kindred spirits congregate, and they who now there met together were not mere country squires, boasting of the performance of their horses, or their hounds. The conversation was, however, principally on rural affairs—crops, tillage, trees—of the latter, not only with reference to ornament, but utility as well. The Fir, since generally known as the Scotch, (though it has no special claim to be thus designated, being indigenous to the greater part of Europe,) had but recently been prominently introduced to public notice, and tens of thousands were being that day planted on untillable steeps and rocky hill-sides, that yielded scarce a blade of grass to the sheep which rambled over them. It is this tree of which Churchill wrote in ecstatic praise, many years after that in which our company was assembled:

"The pine of mountain race,
The fir—the Scotch fir never out of place."

and Scott, at a still later day:

"And higher yet the pine tree hung
His shattered trunk, and frequent flung,
Where seem'd the cliffs to meet on high,
His boughs athwart the narrow'd sky."

The White Pine of America, named in England, Weymouth, in honor of him at whose estate at Longleat, in Wiltshire, great quantities were being planted, had been but lately imported, and from the description of its noble size in its native soil, was dividing attention with the fir. A spirited comparison of their respective merits was made by the party present, some claiming the larger share for the fir, others maintaining, on the authority of travelers in the colonies, the superior merit of the pine: experience, the only true test, has demonstrated the correcter judgment of those who advocated the tree from beyond the Tweed, as best adapted to the climate of Britain, and which at this day clothes untold acres, yielding almost boundless wealth to the descendants of the men whose foresight had thus made fruitful heretofore barren wastes. The scions of the age of which we write

are now stately trees, or as is the case with many—afloat—component parts of England's mighty navy and commercial marine. As the conversation which we have attempted to relate was still in progress, one of the company suddenly exclaimed, "the Post! the Post!" as the echo of a horn sounded over the neighboring hills; not the shrill whistle of a locomotive, careering onward, alike indifferent to hill and dale, but the postboy's twanging horn, which, heard but once a week, was an event of moment:

"News from all nations lumb'ring at his back."

In half an hour after the first sound, the slender mail had been assorted at the village hostelry, and whilst the company were still at table, the butler entered and presented to his master a packet of letters, one of which from its cramped inscription was recognized as from a far distant correspondent: breaking the seal, as he apologized for the breach of etiquette, it proved to be as he had anticipated, from his American friend John Bartram, with a list of seeds and natural curiosities, collected by him at the request of the party to whom the letter was addressed, and announcing that the whole had been forwarded from Philadelphia by the "good ship *Carolina*, Captain Duncan." A note which accompanied the transatlantic letter was from Dr. Collinson, of London, a distinguished man of his age, and mutual friend to the parties, informing the recipient that the *Carolina* had reached her wharf, and that the package would be duly forwarded. Joy beamed in the countenance of the host, who was a devoted lover of nature, collecting specimens from every land, and as he cut a luscious Virgalieu which lay before him, carefully preserved the seed in the letter, saying as he did so, they should go to his Quaker friend of Pennsylvania, in the next package sent him in exchange for his American contribution. * * * * *

We must ask the reader to bound with us over a period of nearly eighty years, and accompany us to a romantic spot on the winding Schuylkill. In front flows the quiet stream, with an occasional shallop lazily borne onward by the tide. We get but an imperfect view of the pleasant scene, obscured by the dense foliage of rare old trees, evergreen and deciduous, which overhang the lawn. In the rear is a cottage of primitive architecture, embowered by ivy—one stone alone is visible, carefully screened from even the classic ivy's touch, by the hand of reverent affection. On it we discern an inscription, which at a clearer view reads thus,—

"Tis God alone, Almighty Lord,
The Holy One by me adored.

JOHN BARTRAM, 1770."

Under a tree near by, furnished with rustic seats, is a family group—the principal figures are two venerable men, who from a similarity of figure and expression, it is easy to perceive are brothers. Both have reached the patriarchal age, but their eyes still beam with intelligence, and benevolence is impressed upon their countenances—evidently they are at peace with themselves, and all mankind;—their creed, in part, expressed by the simple distich on the tablet.

Near them are others, members of an attached and devoted family. We may not more fully draw aside the veil which screens from outward gaze this happy company. The venerated men are John and William Bartram, sons of John, the elder botanist; they and the more youthful persons of the group, are partaking of the product of the Virgalieu, to which we have

alluded. The giver was Lord Petre, and the pear now known and cultivated throughout both hemispheres, as that which bears the name of Petre, was reared from seed sent to America in 1735. * * * At the quaint old village of Darby, which, while all else has changed, stands as it did a century ago, is a meeting house at *Friends*, where Fox had preached, and perhaps Penn had worshiped; around are numerous hollows, once hillocks, where

“The rude forefathers of the hamlet sleep.”

Here the venerable Bartrams, father and sons, repose; no

“Storied urn or animated bust”

indicates the hallowed spot; they sleep beside their ancestors, and near by where their lives were so happily spent. The Petre pear tree itself has survived them all, and still stands at the Bartram Botanic Garden. * *

Again we must ask the reader to take a bound, not so great as the former, but one of forty years—we shall carry him back to the same delightful spot on the meandering Schuylkill. The city in the distance seems not half so far, telling of its wonderful expansion. The floating bridge, once a romantic feature, has disappeared, and the iron rail passes over grounds sacred to nature, but scarcely harms them, sunken below the surrounding surface. The trees which we last saw are still there, increased in growth, and more beautiful than ever, preserved with scrupulous care, not a branch permitted to be harmed—shrubs collected from every quarter of the Union, still, as then, adorn the grounds, and the old house with its pious inscription stands as before, embowered in ivy, an endearing monument of the simple-minded man who built it with his own hands. On the same estate has been erected a modern Italian mansion, and grounds once devoted to tillage are now decorated by the hand of taste. Strangers it is true tread the lawn and thread the umbrageous avenues, but if strangers, they appreciate the place, and have the heart to beautify. Long may the venerated grounds be held by such worthy hands; long may their posterity enjoy the treasure so justly prized; and when, in the mutations of all earthly possessions, they are called upon to relinquish it to others, may they be as happy in their successor as have been the family of BARTRAM. L.

CURIOSITIES OF VEGETATION.

FEW circumstances excite the surprise of observers more than the production of one flower by the interior of another. And yet there is no preternatural phenomenon more easily explained when the true nature of a flower is understood. That curious apparatus, with its panoply of brilliant colors, its transparency, its fragrance, and the important special duties confided to it by nature, is, in the eyes of science, merely a collection of leaves in a transformed condition, and is itself but a branch stunted in its growth.

The truth of this theory is proved by the following circumstances more especially: 1. That every part of the apparatus of a flower, however unlike a leaf, will occasionally, in the presence of disturbing influences, become a mere leaf; 2, that that peculiar property of forming a bud, or rudimentary branch, in the axil, which is an especial attribute of a leaf, also belongs to

the parts of which a flower consists ; 3, that the floral organs stand in the relation to each other as the ordinary leaves upon an ordinary stunted branch, such, for instance, as the rosette of a Houseleek (*Sempervivum*;) and 4, that a flower will occasionally grow into a branch leaving its petals at the base.

The first is illustrated by the green-flowered primroses, proliferous plantains, and those *Potentillas* whose flowers become in hot weather tufts, or rosettes, of leaves. The second by little branches shooting up from among the parts of the flower, as in the pear tree, which will occasionally form two or three little pears in its inside, each of which is traceable to the axil of some one or other of the floral parts, and by the common occurrence of a brood of little roses, starting up from among the petals of a common rose. The third may be seen by any one who compares the rosette of the Houseleek with a double *Camellia*, a double *Ranunculus*, or a double *Anemone*. Of the fourth we have instances in pears and apples producing a branch from their centre, and in roses.

In all these instances the secrets of floral structure are revealed by accident to the eye of intelligence. Nor have artists failed to profit by them, as we see in the carvings and scroll work of the sculptor and the architect. Even the curious fact that one flower will grow out of another has been seized upon by them for the purpose of decorating the points of separation of branches, and this in a manner which, however conventional, is perfectly consistent with the true forms of Nature.

Nowhere, however, has the tendency of one flower to give birth to another been shown in a more unexpected manner than in the case here illustrated. In the aquarium at Syon House, it was observed, a few weeks ago, that the beautiful water lily called *Nymphæa Devonensis*, had produced a flower from the midst of which rose another lily like itself, hanging gracefully at the end of another stalk.

When flowers thus become proliferous, it usually happens that the whole central system lengthens, as is shown in the rose, the metamorphosed branch merely reverting to its original condition and lengthening by the point, always represented by the centre of the flower. But in this instance the mode was changed, and the new flower with its stalk proceeded directly from the axil or base of one of the stamens, as is seen in figure A, which represents a section of the flower rather magnified. The *Nymphæa* therefore belongs to the examples which are to be included in the second of the four classes mentioned at the commencement of this article, and it is by far the most striking instance of the kind yet on record.

But the disturbance of the natural condition of this water lily was by no means confined to the production of a second flower. On the contrary, it extended to the innermost organs, and forced the very stigmas to grow up into small green leaves, folded up, as they always are, in the young bud. Two instances of the kind are shown in figure A.

This monstrosity, for a monster it is, serves to illustrate a very important truth which those who are engaged in works of decorative art should never lose sight of. Any amount of departure from the strict forms of plant-objects is allowable in a conventional mode of representation, provided that departure is consistent with the rules by which is regulated the development of the plants to be represented. These rules constitute the theory of structure which every decorative artist ought to understand thoroughly ;



and the case before us shows how it may be applied in one direction which was perhaps very little expected. Flowers may be made to grow out of flowers, with perfect propriety, when the exigencies of art demand it; although leaves cannot be made to grow out of leaves without violating the first principles of vegetable structure, and thus offending the educated eye by the production of that which is wholly irreconcilable with truth or possibility.—*Gardener's Chronicle*.

THE MAY-APPLE.

The May-Apple, so extensively diffused throughout the United States, is a well-known indigenous herbaceous plant, growing luxuriantly in almost every moist and shady woods, often in dense patches, propagated by its creeping root.

This form of root is called a rhizoma, considered rather as a stem under ground, and is the part used medicinally—most active after the leaves have withered in the fall; the leaves are not eaten by cattle, and are reputed as being poisonous. Though called *May-Apple*, the fruit never ripens before *July*, and is found also until late in September. It has a sweetish taste, much like the fruit of *Passiflora edulis*; according to Dr. Griffith, it also resembles it in outline: to some palates, its peculiar taste is quite agreeable, and it may be eaten freely with impunity.

Its dried and powdered root is extensively used, and enters into various recipes, under the name of "Mandrake." It has, besides, other local names, such as Raccoon-berry, Yellow-berry, Wild and ground Lemon, Pecan, &c. Our Pennsylvania Germans call it *Bush-Appel* (wood-apple), while the European Germans call it *Enten fuss* (duck's-foot), from the fancied resemblance of the leaves to the webbed feet of a duck; the stem of the leaf being centrally attached, is called a peltate leaf. Thus we have the significant scientific name compounded from the Greek, for *foot* and *leaf*, for its generic term, and the character of its attachment for the specific name, viz: *Podophyllum peltatum*.

These hard names are frequently objected to, yet it is much better to have a proper name, recognized in every language by men of ordinary education, than the arbitrary and numerous local terms so perplexing. For instance: in "Dr. Beach's American Practice," of 1848, p. 667, he calls it "Mandrake," and figures a reproduced cut of the *Podophyllum Montana*, a questionable species described by Rafinesque, and also figured in "Griffith's Medical Botany," p. 117; thus giving an erroneous figure and an objectionable name, since the "Mandrake" is a name appropriated for ages past to the "Mandragora," a species of *Atropa*, about which the most marvellous stories are told by some of the older authors, (See Loudon's Encyclopædia of Plants, p. 154-5.)

In the "American Cattle Doctor," by G. H. Dadd, M. D., published by A. O. Moore, 1858, p. 112, is the following remedy for the cure of *Pleuro-Pneumonia*, or when cows are attacked with a slight cough.

- R Powdered Golden Seal, (onic.) 1 table-spoonful.
 " "Mandrake," (relaxant.) 2 teaspoonfuls.
 " Lobelia, (anti-spasmodic.) 1 teaspoonful.
 " Slippery Elm, or Malloes, (lubricating) 1 table-spoonful.
 " Hyssop tea, (diaphoretic,) 1 gallon.



PODOPHYLLUM PELTATUM.

Strain the tea, mix the ingredients, and give a quart every two hours. In the meantime, inject half a table-spoonful of powdered lobelia and ginger each, mixed in a gallon of boiling water. The remedy is a good one.

It is not my intention to enter into an extended recapitulation of the numerous recipes into which the May-Apple root is introduced. I give the foregoing as an example of the necessity of making use of proper names, when dabbling in curatives. True, what is there in a name? "a rose by any other name would smell as sweet"—or something like it, was said by Shakspeare. Yet, to give a dose of *corrosive sublimate* instead of *calomel*, because both are compounded of mercury and chlorine, would not answer; and hence a correct knowledge of names and properties is of vast importance.

Dr. Jno. B. Newman recommends the following for a good and efficient purgative:

Take of powdered May-Apple (root) one ounce.
 " " Cream of Tartar " "
 " " Spearmint, half an ounce.

Mix thoroughly; dose, a teaspoonful. This is to be given when purging

is required in fevers. Some authors say that from five to ten grains of the powdered root is a dose. The late *United States Dispensatory* recommends twenty grains for an active purge.

This discrepancy arises from a difference in collecting the root, since they are difficult to find after the decay of the leaves, (unless the spot is marked;) collectors take them up while still in flower or fruit, and supply the shops, being then conspicuous and readily seen.

"An extract is also made, which is a good substitute for the extract of Jalap—dose from five to fifteen grains."—*United States Dispensatory*.

According to Dr. Smith, the resin, when pure, is white, and purges actively in the dose of two or three grains; this is the *podophyllum*, with which a country quack, a few years ago, came nigh unto purging one of his patients "beyond Jordan."

I cannot avoid adverting to the great difficulty systematic botanists have met with, in assigning to our May-Apple its true position. Dr. Asa Gray appends it to his Berberals, because its affinity is close to that of *Jeffersonia Diphilla*, also a single species, dedicated by Prof. Barton to Thomas Jefferson; this is the celebrated *rheumatism root* of Ohio, the anthers of which are valvular, a distinctive feature in the Berberry family. However, it also resembles in its habits our Blood root plant, quite as much, or rather more, than it does the May-Apple.

Dr. Lindley says its affinity is more nearly with the Crowfoot tribe, and maintains that "the main distinction between the Berberries and Crowfoots consists in the recurved anther valves of the former; and as *Podophyllum* has not such valves, it must go to *Crowfoots*."

Dr. Lindley again says: "that the Crowfoots differ from Dilleniads in the want of an aril, a *deciduous calyx*, &c." But it happens that our May-Apples have arilled seeds, as first shown by Prof. Torrey, in his "Flora of New York, (State)," Vol. I, p. 35, and a *deciduous calyx*; also, Prof. Alphonse de Candolle attaches great generic value to the arillus; all things considered, it comes as near to our custard apple, commonly called *papaw*, in its pulpi-arilled seeds, deciduous calyx, two-ranked petals, extrorse anthers, numerous ovules, &c. I have even traced faint outlines of the rumination on thoroughly ripened seeds, approximating still more closely to the *papaw*. Yet, I will not enter the list with men of the known ability of Prof. A. Gray and the celebrated Dr. Lindley, by giving a contrary opinion.

Though one species only is recognized generally, yet, according to Dr. Gray, there is one found in the Nepaul Mountains, which has but six stamens,—the *Podophyllum hexandria*; this, and because the "*nandina*," to which latter the same objection in not having valvular anthers would obtain with equal force, and not objected to by Lindley, who, notwithstanding, retains *nandina* among his Berberals, also, has no doubt decided Dr. Gray in his opinion, which is certainly less objectionable than that of Dr. Lindley.

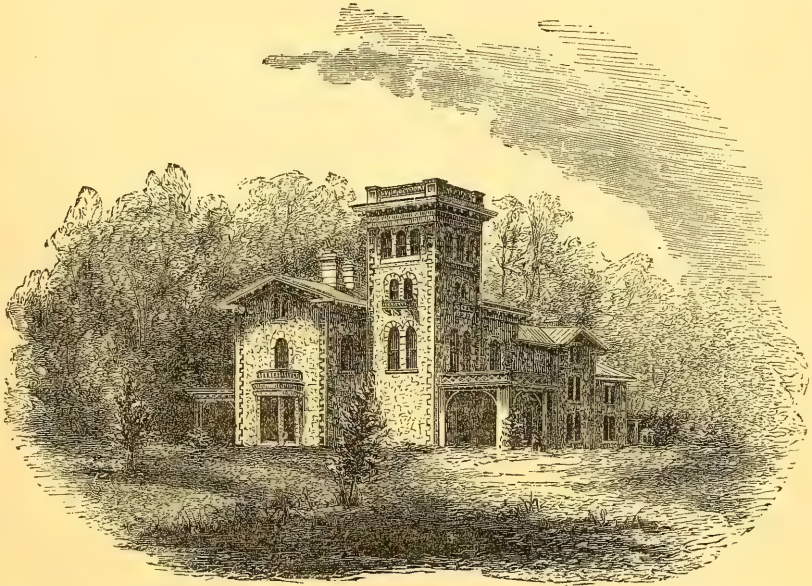
To close harmoniously, allow me to quote from Stillingfleet:

"Would you both please and be instructed too,
Watch well the rage of shining, to subdue;
Hear every man upon his favorite theme,
And ever be more knowing than you seem,
The lowest genius will afford some light,
Or give a hint that had escaped your sight."

A BEAUTIFUL DWELLING.

THE annexed representation of a house was taken by an amateur daguerreotypist at our request, to exhibit a tasteful structure of stone, well adapted to the wants of a family requiring "all the comforts." It has been erected lately in the vicinity of one of our principal cities, and is esteemed in the neighborhood a perfect house. The inside divisions will easily present themselves, and may be modified to suit different tastes. The *porte cochere* is admirably situated ; you drive through it to the stables, concealed by hedges.

A pleasing writer in Fraser's *Magazine* for December last, who, by the way, devotes several pages to Mr. Vaux's work on cottages, pro and con, discusses the impossibility of our being happy *anywhere*, and declares, "I do not hesitate to say that the scenery amid which a man lives, and the house in which he lives, have a vast deal to do in making him what he is. Life



in itself is a neutral thing, colorless and tasteless ; it takes its color and its flavor from the scenes amid which we lead it. It is like water, which external influences may make the dirtiest or cleanest, the bitterest or sweetest, of all things. Life, character, feeling, are things greatly dependent on external influences ; only stolid people are not affected by the scenes in which they live." We all remember the little child in Wordsworth's poem, expressing a decided preference for one place in the country over another, which appeared to have greater attractions ; and who, when pressed for his reasons, did, after much reflection, fix upon a single fact as the cause of his preference :—

"At Kilve there was no weathercock ;
And that's the reason why."

He adds, "I do not think I have ever seen happier people, or people who appeared more thoroughly enviable, than those who have been building a pretty residence in the country." If, then, this is a source of happiness, and external influences are of great import, it is well to select a good example, and build your mansion with taste.

TROPÆOLUM SMITHII.

SENT by Mr. William Lobb, from Peru. A climbing annual, with smooth dark green five-lobed leaves, glaucous on the under side. The flowers



grow singly from the axils of the leaves on very long stalks, are bright orange red, with the petals divided at the edge into bristle-pointed teeth.

It is a very pretty species, which deserves to be more generally cultivated than it is.—*Horticultural Society's Journal*.

INQUIRY.

BY WM. BACON, RICHMOND, MASS.



HY is Horticulture not one of the branches taught in our colleges, academies, and common schools?—*Horticulturist of January, 1859.*

These institutions claim an age in the history of our country, cotemporary with that of its settlement. The common schools, it seems, from authentic records, were designed for the common people,—farmers and mechanics, on whom, in those early, erring, though we doubt not, honest

days, it was considered folly to expend money for an education, beyond teaching "to read, write, and cypher as far as the rule of three." If occasionally a lad broke over these bounds, after any course of perseverance, he was knighted "*a smart scholar*," fit to send to college; or, if he chose the less assuming path of making himself useful, he was destined to be one of the great men of the town,—selectman, or, perchance, representative to the great and general court. In those days, strong arms were considered the main essential to make a cultivator of the soil; for heavy forests were to be cleared, and when these were removed, it was only necessary to plough and sow, or plant and hoe, in order to insure great crops.

Horticulture, in those days, received but very limited attention. The emigrant took seeds of the apple, pear and peach, from the *old homestead*, and planted them in the virgin soil of the new one, and the trees that sprung from these, without grafting and almost without pruning, formed their early orchards, whose fruit was so superior to none at all, they did not trouble themselves to improve it. The smaller fruits were so liberally furnished through the spontaneous fertility of the soil, that, had art offered its aid in multiplying or improving them, nature perhaps would have laughed at the mockery. Consequently, the demands of horticulture as a science were not known, and its future did not enter into the calculations of the age.

Under these circumstances the educational institutions of our country were established. Probably no one anticipated, in that day, the first shadowing forth of the intellectual results that are brought into action now for the improvement and general culture of fruits, vegetables, and flowers. Of course it was not strange, that in this primitive age of dark forest and fruitful fields, that the mysterious beauties of horticultural science were not unfolded in the common school.

Academies were but a stepping-stone between the common school and the college, and their students consisted mainly of those who were preparing for the latter, or, by a shorter cut, fitting themselves for the studies of what then, very mistakenly to be sure, were dubbed "*the learned professions*." Of course they had renounced physical labor for the absorbing occupations of mind, and the ever fresh and instructive lessons of nature were, for the most part, entirely neglected for the drier, though then considered all-important and absorbing studies of ancient languages. They held no sympathy with the rural arts, and the unsophisticated charms of nature were passed by, unheeded and unknown.

Colleges were founded for the more direct and specific purpose of fitting young men for the pulpit, the bar, and the medical profession; each of which then, as now, owed an importance, from their direct relation to the wants of the masses, which could not be, and wisely was not, overlooked. *Then*, however, as now, it could not in ordinary cases be expected, that young men who chose an occupation in rural life, should go through a college course. An amount of time was required, and an expense, beyond the means of most young men, even if their inclination had led them to such a course.

Consequently, it appears that in the very foundation of our literary institutions, the claims of rural science were dropped,—partly, it may be, from the ignorance or apathy of the stern cultivators of the soil,—essentially, by the founders and managers of these institutions, by placing the prize of intellectual progress and intellectual honor beyond their reach.

In the progress of events we feel our wants increasing, and as the means to favor the object accumulate, a more refined and elevating study is sought after. When the forest has passed away, the log house soon disappears, and a more congenial dwelling arises on its site. The crabbed seedling apple, the choke pear, and wild plum, are soon found to be like the lean kine of old—a something that devours the land without growing fat themselves, or permitting anything else to be benefited by them. The taste, the health, and consequent comfort, then, requires something better. The apple must be firmer, and of a more delicate flavor,—the pear must be more melting,—the peach must blush deeply and drop in melting sweetness from the tree that has the place of one whose dry and tasteless fruit proclaimed the stock on which it grew a cumberer of the ground. The grape must be improved in quality, and hang its fragrant clusters along every wall and over every dwelling in the land. Flowers, too,—those beneficent gifts of the Creator,—must have a place, and be spread around to beautify the garden and the lawn.

Can all this, a moiety of man's legitimate wants, be accomplished without the help of science?

Where then shall we get our information? Why is horticulture not one of the branches taught in our colleges, academies, and common schools? We believe some attempts have been made in some of our colleges to have departments of this kind, but somehow they do not seem to be very successful. In fact, if the inquiry were to be made, What will our colleges do for the benefit of horticultural science, as we need it practically demonstrated? we should have but little hope or expectation of their ever doing much. *What have they ever done?* We admit some of their officers have planted trees and flowers for their own gratification, and some have written beautifully in praise of these things; but who has ever seen the president or professor of an American college open its doors, and heard them say to the young cultivators of the land, We see that you admire the beauty of our fruits and fragrance of our flowers,—come in here, though ours is a different sphere; and if we cannot teach you how to raise the like ourselves, we have a brother professor of this particular department, who will teach you by illustration, and at a rate to which you cannot object; for the State aided us by her funds, in our infancy, and now, by a wise arrangement, and with all gratitude for past favors, we are willing to give her sons a more universal aid, in a high and noble profession. And who has ever known a solitary

college in all *our broad republic*, to confer its humblest honors on one, *only one, cultivator of the soil*, however learned he may have been.

Is not *the why* in their case sufficiently explained to allow the inquirer to imagine the rest? We fear our sons will have to draw their instruction from other sources than our colleges, in these matters, or never be very wise in them.

Seeing these things are so, the natural conclusion is, that if the cultivators of American soil are ever to enjoy the benefit of such institutions as their rightful merit demands, and as their dignity requires, they must throw themselves on their reserved and lawful rights, and establish colleges of their own. Happily the cultivators of New York, Pennsylvania, and Michigan, have made an earnest move in this matter, the latter State already having an Agricultural College in successful operation, and the former one nearly or quite so. Why should not every State have them? Law, medicine, and theology, have their institutions, and the public purse has been liberally opened for their endowment and support. Are agricultural and horticultural science any less important, or less intricate than these? Is the intellect of the cultivator of the soil any way inferior or more unworthy of improvement than that of other men? Will consequences less conducive to the health and comfort of the human family result from an educated and enlightened system of agriculture and horticulture, to say nothing of the luxuries these will bring, than from enlightened lawyers and physicians? Are the class engaged in earth culture born with minds less susceptible of expansion than those of other men, and are the *pleasures of science* less a luxury to them?

If these questions can be answered affirmatively, then we knights of the soil have stood in the back-ground long enough, and it will be to our shame to remain there another year. We must have *our* peculiar institutions and seminaries of learning, and the State that has taxed us so long for the support of colleges, must extend her right hand in our behalf; and the colleges that have urged their claims so long and strongly upon us, and never called in vain, must hold up until *our* colleges take an honorable stand by their side. Then, and not until then, will the spirit of our republican institutions be honorably sustained. Then, and not before, shall we partake of the equality and freedom to which the laws of nature and nature's God entitle us.

[Mr. Bacon writes forcibly in a good cause. At present the teachers of youth, as a class, are utterly ignorant of the foundation of those sciences by which the greatness of this country is to be sustained; they teach too much *by the book*, cramming overnight for the lesson of the morrow, while of the natural objects around them they are as ignorant as we are of Japanese life. The tillers of the soil, the majority, if they will only use their power, may control this government, and the time is not far distant when they will do so. Naval and military expenses are necessary, but is it not equally important to defend our young agriculturists and horticulturists from their worst enemy,—*ignorance*, by which they lose their time and bury their talents?—Ed.]

RURAL CHURCHES.

BY W. T. HALLETT, ARCHITECT, HARTFORD, CT.

COMPARATIVELY speaking, there are but few good examples in our country of the rural church.

When we consider the progress of architecture during the last few years, as displayed in the country residence, the beautiful edifice of the city, and the many fine and costly larger churches, we are compelled to admit that the little rural church has indeed been overlooked.

This department of architecture is certainly not devoid of interest, for a successful example therein is worthy of study as well as admiration. Neither is it lacking in consequence ; for a country church, if beautifully



designed, and "properly ordered," is a constant teacher to all who witness it : a man can be a better Christian in a well-proportioned church, than in one where the opposite is the case.

In many instances the amount of money to be expended is so limited, that the idea of consulting an architect is given up, as it were, before it has been scarcely thought of—unwisely, however, for in such cases there is the more need of professional aid ; for it requires talent and experience to design a building—especially a small church, to the best advantage.

We will next point to a church where it is evident that abundance of money has been expended with but little beauty, and no good designing to show for it.

Everything about it, of course, seems very fine to those who contrived it, and they were certain ambitious ones of the town, anxious to see something of their own invention put into form,—and, with the aid of a builder, something has been produced that is to stand in the public gaze for the next fifty years, making horrid faces at you constantly. There is as much expression in architecture as in the human face.

The greatest evil of all, however, in the matter, is this :—the ambition of those who build in the country to imitate the church of the city.

The tall, pretentious spire has an attraction about it that entirely supercedes anything that may be urged in the way of a more rural propriety, and a committee, once possessed of this idea, can hardly be moved by any reasoning that may be brought to bear, however good and plausible.

Fitness is the point to inculcate, and what seems most to be wanting is a rural sentiment ; people are not content to have their house in the country as becomes a country house, but are ambitious to build it as large, and magnificent, and city-like, as possible.

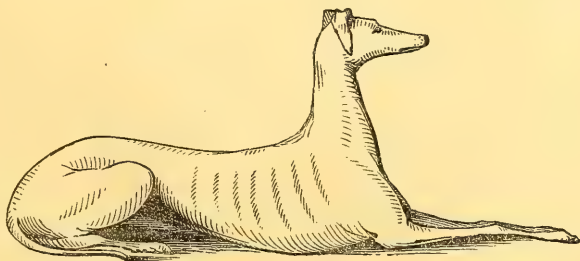
Reader, should you have to do with adjusting the features of any rural church, place your building well retired from the street, and if possible let it be built of stone. Better, however, of brick than wood.

Strive that it be a beautiful and proportionate structure, peering out at passers from among the graceful and well-adjusted trees, and in time exulting in its mantle of ivy.

Then, with the noble elm over-topping the very tower, and the graceful willow and the evergreen arranged in the ample yard, with the broad curved pathway leading up to the church's front, you will behold something of what the rural church should be.

And although your vain pride suggests that it be flauntingly set up to the very street's edge, with its high walls and tower rising ambitiously up therefrom,—reflect, then, that the first picture will be far more creditable to your good taste than this last can possibly be.

Yes, enclosed with a fine hedge of evergreen, and embowered in shrubbery, the little church stands modestly back, while the villagers, as they wend their way up the walk, are welcomed as it were by the hospitality of the scene, and bade to enter in peace and joy. All is quiet,—far removed from the noise of the street ; the church is commodious and comfortable, and care has been taken that all things shall be done with decency and order, while the simple choral music and the good man's words incite the soul to loftier purpose, wafting it to higher and better spheres.



FRUIT SPURS AND FLOWER BUDS.

[From the London Gardener's Chronicle.]

SOME curiosity has been excited by a report upon the Paris Horticultural Society, in which it is mentioned that "the finest pears exhibited were produced from *flower buds* which had been inserted on barren spurs of other trees *during the previous autumn*." We are not surprised at inquiries having reached us as to the manner in which this novel operation was performed, and we have done our best to satisfy them. But no kind of success has attended the examination of French gardening books, and we are driven to the conclusion that either the reporter, an experienced practical gardener, was misinformed, or else that the method of grafting in question is undescribed.

What approaches it most nearly is the not common, but far from unknown, practice of grafting fruit spurs upon barren branches, so as to get a tree covered speedily with bearing wood. Of this an example was sent from Trentham by Mr. Wren to one of the late meetings of the Fruit Committee of the Horticultural Society, and will doubtless be described hereafter in its proceedings, which we believe are in the press. The instance to which we now refer was that of the Jargonelle ; and the Committee were informed that imparting fertility to a worn-out tree was not the only advantage ; for it was found that greatly increased, or rather a complete renewal of, vigor in the stock attended the practice. Here the operation consists in spring grafting worthless side branches with fruit spurs in the common English whip manner.

Some such contrivance for securing immediate fertility in pears seems to be growing in favor among the French, who speak in their gardening books of a certain *Greffe Luizet*, called by Carrière the *Greffe mixte*, very suitable for the operation. According to that writer it is performed thus : towards the end of summer, in August for instance, when the shoots have nearly done growing, spurs or branches to be used as scions are pared down as thin as possible at the base, so as to remove the greater part of the wood. The stock or branch to be grafted is then cut through in the form of a T, as if prepared for budding, the sides of the T are gently lifted up with the flat handle of the budding knife, and the thin end of the scion is pushed in, so as to bring the inside of its bark or what remains of its young wood into immediate contact with the alburnum of the stock. The scion is then secured firmly with bast, every part is carefully covered with grafting wax so as to completely prevent the access of air to the wounded surfaces, and every leaf on the scion is cut off so as to leave only the stalks remaining. This kind of grafting is properly called "mixed," because in fact it is half budding and half ordinary grafting.

An interesting account of the results of this, or some similar process for grafting young pear trees with fruit spurs, is to be found in the April number of the journal of the Paris Horticultural Society in the form of a report by M. Pepin upon the garden of a gentleman named Bourgeois, living at Perray. In this place, by grafting pear trees on walls with fruit buds, or

better with fruit spurs, the following were obtained on a square yard of the *Beurré Poiteau nouveau*, worked on the quince :—

Number of pears.	Sort.	Total weight in Kilos.
9	Beurré Poiteau nouveau.....	2,795
3	Beurré Clairgeau.....	1,683
3	Beurré de Noirechain.....	375
7	Beurré magnifique.....	2,560
2	Délices d'Hardenpont.....	475
6	Belle de Berry.....	1,685
5	Bergamotte Esperen.....	1,170
3	Duchesse d'Angouleme.....	1,170
38	Total	11,913

Had the whole of M. Bourgeois' pear wall borne equally well, he would have had 3800 pears weighing 1200 kilos on 100 square yards.

M. Pepin further states that the effect of spur grafting (*l'application des boutons de fruit en écusson*) was to increase very remarkably the weight of the fruit. He found a pear thus treated weighing 630 grammes, instead of 375 grammes, the weight of the heaviest fruit borne upon the branches unoperated on.

Perhaps some French correspondent can favor us with further information upon this interesting topic.—[Which possesses even more interest than that of ringing the grape vine.—Ed.]

SPUR GRAFTING.—*From the same.*

The interest excited by the method of immediately rendering barren fruit trees fertile by using fruit spurs or buds as scions is so great that we lose no time in returning to the subject. In another column will be found a translation of a good practical paper, by Mons. Baltet, a French nurseryman, in which he fully describes his mode of operating. The following memorandum from the valuable correspondent who first drew attention to the practice, also throws further light upon the question :—

"The notice, in a late number, of a sentence contained in the brief report sent to you of the exhibition of flowers, fruits, &c., held by the Horticultural Society of Paris last September, viz : 'that the finest pears exhibited were produced from flower buds which had been inserted on barren spurs of other trees during the previous autumn,' leads me to offer some additional information on the matter. You state you are not surprised at the inquiry made about this novel operation, and farther, that no success has attended your examination of French works on gardening relative to it; consequently you are driven to the conclusion 'that the reporter was misinformed, or else that the method of grafting (budding I would rather call it) is undescribed.' In reference to the foregoing, I would beg to state in the first place, that my opinion on the superiority of the fruit appears to have coincided with that of the judges, who awarded a first-class prize to the group; and in the second, that it was under the supposition that the latter of your conclusions is correct, at least in so far as English practice and works on horticulture are concerned, that I considered the subject worthy of being

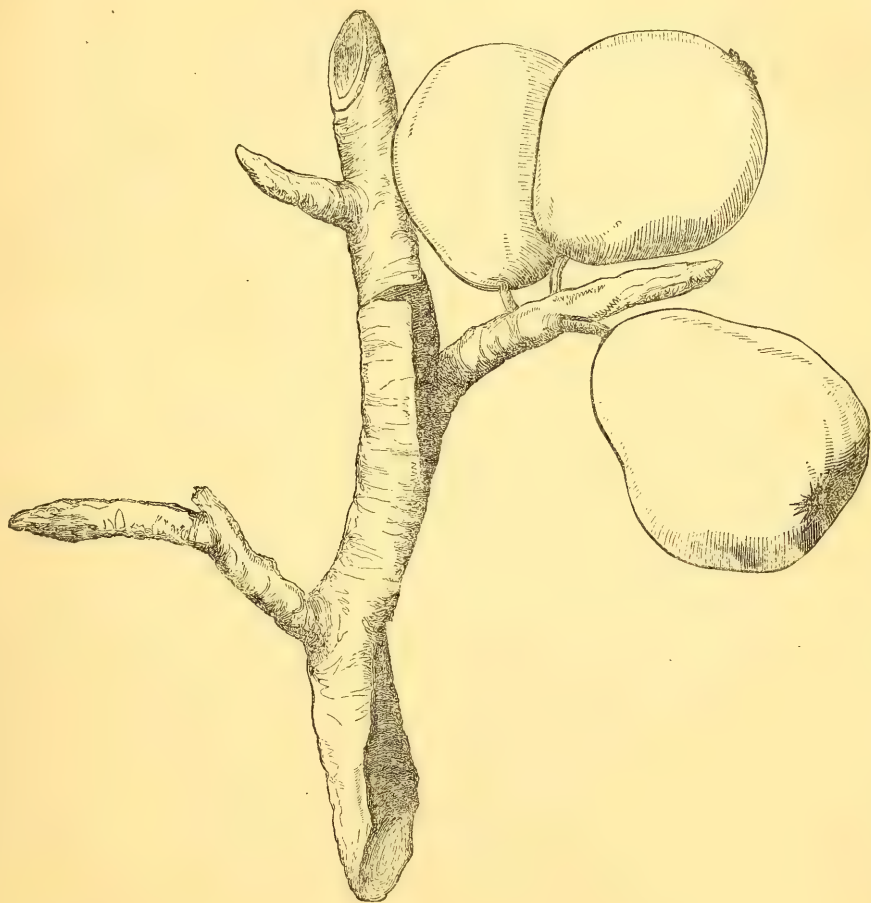
recorded. My imperfect knowledge of the French language might make me doubt whether I understood exactly the information given to me by the gentleman who exhibited the fruit in question, but it was fully borne out by what I saw. The spurs on the parent tree on which the fruit buds were inserted were cut off, together with the latter growing on them, and the fruit still attached, of which I made the accompanying rough sketch. Judging from the extracts you give of M. Pepin's report and M. Bourgeois' garden, I consider the budding with fruit buds to be similar both in practice and effect to that in question. I may also refer to another French work where this method of budding fruit buds is very pointedly alluded to, viz: '*Méthode Élémentaire pour tailler et conduire soi-même les Poiriers, Pommiers, et autres Arbres Fruitières*,' &c., par Jean Lachaume. Paris, Bouchard-Huzard, Rue de l'Eperon, No. 5. At page 49 of that work, under the head '*Greffes de boutons à fruits*,' the author states: 'This mode of working is employed at the beginning of August for apples, and at the end of the month for pears;' and after giving directions for the performance of the operation, he further states:—'This method is employed successfully on trees which are obstinately barren; it ensures a crop the following year; and when once the fruit spurs are fixed on such trees, the crop they bear will completely overcome the excessive vigor of the stock, and hasten the time of ripening.' The foregoing may assist inquiries on this interesting subject, which I have no doubt can be fully explained and dilated on by M. Louis Bernier, au château de Boulayes, près Tournan (Seine-et Marne,) or his gardener, M. Mayre, who according to my notes are the parties who exhibited the pears."

In further illustration of the effect of spur-grafting we have before us two branches of the Easter Beurré thus treated at Trentham, where the method has for some time been employed under the intelligent management of Mr. Fleming. One of these specimens had been a scion five inches long with a single spur on the side. In the first season it made three inches further growth, and has now seven magnificent pears on eight inches of wood. The other specimen had been a scion nearly four inches long, with a spur near its base. The first year it made rather more than three inches of wood with two spurs. The second year it extended ten inches, forming four spurs; and this year it carried nine capital fruit on about seventeen inches of bearing wood.

In one important respect Mr. Fleming's method differs from the French. They graft in August only, he grafts both in spring and autumn. The French seem to have taken August in order to avoid with certainty the chance of the fruit spurs breaking into wood and forming branches, as we should have feared they would do. No such bad consequence appears however to have been experienced at Trentham. The method of working there adopted is the common English side-grafting, the only kind that can be conveniently followed.

That this process will come largely into use can hardly be doubted, for it enables the gardener immediately to cover the old naked branches of his wall pears with bearing wood, not only of the same variety but of any other variety—an immense advantage—and it also invigorates old trees in a very remarkable manner by aid of the abundance of new healthy wood, which these stranger spurs immediately organize all over the old alburnum.

For so complete is the junction between stock and scion in this spur-grafting, that no force will separate the two after the first year.



FRUIT BUD GRAFTING.

BY M. CHARLES BALTET, NURSERYMAN, TROYES, FRANCE.

For the last eight years we have practised grafting blossom buds in order to cause barren trees to bear fruit; and the results have always been satisfactory. In endeavoring to extend the practice, we cannot do better than give some explanation as to the mode of proceeding.

In the course of the month of August, cut off fruit spurs from trees where they are too numerous. Let them be shortened to lengths of from $\frac{1}{2}$ to $1\frac{1}{2}$ inch, and cut slanting as if for crown grafting; then make in the

branch a T cut for the reception of the scion as if in budding. The graft should be tightly tied with matting or rushes; and as there is always a space at the upper part of the wound, surround it with grafting clay, pitch, or liquid mastic. In the following spring the fruit buds thus inserted will flower and fruit quite as well as if they had not been removed. Frequently, indeed, the fruit is much larger than that on the tree from which the grafts were taken. We should endeavor as much as possible to graft on a vigorous branch, and near its base; and even on the main stem very handsome fruits are in this way produced. These fruit spurs retain their bearing properties in succeeding years; and if an eye produce a wood shoot, it must be successively pinched back in the usual way.

It will be seen that by this system it is easy to utilize fruit buds which have been cut off in pruning, as well as those on trees which have to be transplanted, or on branches which are to be cut off, &c. Every eye should be turned to account; those fruit buds which have no spurs may be raised up and worked like common buds; and spurs on which the fruit buds are crowded may be split longitudinally; in fact it is impossible to explain every mode of cutting the scion, for that must be left to the judgment of the operator.

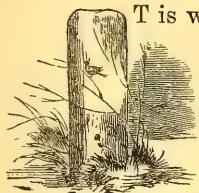
The most suitable period for this operation is when the flow of sap is declining, for if performed too soon the fruit bud might become a wood bud; it is sufficient that the edges of the bark can be easily raised; and it is almost needless to add that the bud should have some alburnum attached to it, which must not be removed. We have made some experiments with this process, but the pear has always afforded the best results. We have one tree which bears, besides two varieties of pears, the White Beam and two sorts of Service, covered with fruit.

Pears,—Williams's Bon Chrétien, Colmar d'Aremberg, Duchesse d'Angoulême, Esperen, Beurré Clairgeau, Nouveau Poiteau, Alexandrine Douillard, Spoëlberg, and other very productive varieties, succeed perfectly well, and produce every year handsome and very good fruit. Experiments with large-fruited varieties worked with small ones, and melting kinds with those that are not so, have led to no conclusive results. Nevertheless, several kinds of pears may be gathered from the same tree. The length to which the scion ought to be inserted is very variable; it should be in proportion to the length of the part not inserted, and a length of 1 centimètre, (four-tenths of an inch,) has succeeded quite as well as one of 15 centimètres, (nearly 6 inches.) We are of opinion that some kinds of ornamental shrubs may be treated in the same way.

M. Luizet, of Ecully, (Rhône,) was the first who called attention to this mode of grafting, in 1849; after him a horticulturist at Rouen, and we were amongst the first who practised it in France. M. Luizet also increases the size of his pears by inarching an herbaceous or young growing shoot on their footstalks, and maintaining the fruits in a horizontal position. We have witnessed these facts and can vouch for the whole of them.—*Annales de l'Académie d'Horticulture de Gand.*

GOOD CULTIVATION A SCIENCE.

BY FOX MEADOW.



It is with no small degree of pleasure, that minds seeking truths turn over the pages of the *Horticulturist*, and catch those beautiful gems evolved by free discussion. It agitates thought, which is the *beginning of wisdom*. The mission of this valuable journal we conceive to be, the development of a higher plane of thought, that will practically and scientifically work out a higher and better system of cultivation. It is with much interest and pleasure that we read such articles.

Good culture should be the ambition of all who have the care or charge of vegetable life; but how this is to be effected is what we are inclined to speak of.

It appears to our mind clear, from an established law in nature, that vegetable life and its organism is the product of the constituent elements of the soil, springing into existence under favorable atmospheric influences. Combined with this law, we have another,—the law of *reproduction*. Hence, we have a fruit tree organized, constituted, and *designed*, to produce fruit. Here we are brought to a stubborn fact—that, as the tree is *designed* to produce fruit, and that under our special care it is abortive,—we do not understand its good culture. The fact that this tree *has* produced a plentiful supply of good fruit, proves also that it can do it again under the same circumstances. Why should I be dissatisfied with that beautiful piece of machinery,—its mal-working, when through my inexperience I clogged up its working joints and axles with an improper oil? If it is true that a tree is produced from the constituent elements of the soil, and that in that soil has flourished and produced good fruit for a season or two, and then dwindles away—does it not prove that that plant has extracted from that soil the very elements requisite to its being? Who among us, as gardeners, will say that deep ploughing, plenty of rotten manure, weeding and watering, &c., are the only requisites for good culture? This does not always yield the desired results. Here we have no pears; there we have grapes, but those that should be black are red; again, those that should have swelled off fine, have *shanked* off nearly altogether. What are the conclusions generally drawn from these observations? First, my trees are a failure; and in the second place, my vine border is wrong, drainage is wrong; or, I will try a good *ringing*. But let us look at the border—it has been well-drained, we thought, but still the vines don't do; so we will drain a *little more*. We are got to work at the border, and find in the bottom over two feet of broken stones—a *perfect filter*, supplied also with plenty of main-drains, to carry off the filterings. Well, do you see any *roots*? Yes, plenty, hanging like a lot of parasites among the stones; their appearance reminds me of an English fox hunt. It was a bagged fox, and the hounds had been on short diet some time, consequently desperately hungry; however, the fox was released from the bag and the hungry hounds after him. After a long and wearisome chase, there was a desperate rush for the brush—in a few minutes more and the dashing horsemen were plunging one after the other

among the dogs on a great heap of stones, but the fox was gone!—had *popped down a drain!*

This vine border was similar. The material compound took some time before it was in a fit condition for the hungry roots, and when it was, it was like the fox—popped down the drain; and the roots, similar to the hounds, got a splendid chase for nothing.

How often is it the case, we look anxiously on a beautiful bunch of grapes, feeling confident *within* of carrying off the prize at some society's rooms, when lo! just as we expect to get the *sugar* placed in the fruit, *we often get the vinegar!* And this occurs with the best of our horticulturists who consider themselves *good cultivators*; and to remedy this, fly to the borders to drain again for *shank*. If Mr. A. wishes good sweet coffee for his breakfast, and has but two spoonfuls of sugar, how ridiculous it would be for him to attempt to sweeten a gallon with that amount of sugar. This shows how very little we know of what we pretend to know a great deal.

Whoever has studied the vine and its diseases, so called, knows that *shank* is an *effect* produced only in a certain development of the plant, and that it is almost instantaneous in establishing its identity. That beautiful purified compound stream, ever flowing in accordance to the law of capillary attraction, has supplied the cellular tissue with its requirements; but has nothing more for the berry. Its collectors have taxed their *prescribed* region, and collected every cent; nothing remains but bankruptcy. Often these collectors burst their prescribed bounds, sympathy, affinity, and attraction are so strong; and we are often wonderfully amazed to find these collectors out of bounds; going through our gravel walks, apparently leaving our very nice *drugged mess* that we have formed for them, unnoticed.

Before gardeners can call themselves *good cultivators*, they must possess a combined practical and scientific knowledge of the constituent elements forming the wood and fruit of plants generally. Science teaches and experience proves, that the elements that produce the one do not develop the other.

You never expect *fruit* from a monster wood-producing tree. We have perfection in this department, and all others, when the equilibrium is manifest. How to gain this equilibrium and maintain it, is a knowledge we as gardeners should possess; and not find fault with a tree and its fruit, or no fruit, because we do not understand *how* and *when* to supply the proper elements of fruitfulness.

We must be guarded, and not confound the development of cellulose, with that of the gum. If we find that it is the phosphates which in a great measure develop the former, we may also find the potassic salts to determine the latter.

A knowledge of these elements, when and how to use them, and in what they exist, so that it can be profitably and practically put into use, is what we require to make us *good cultivators*. We must possess the knowledge that gives the power to say *I will*, and then the *I can't's* become obsolete.

EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

LOCAL SOCIETIES, AND THEIR IMPORTANCE.—There can be no doubt of the importance of local Horticultural Societies, for the guidance of each district or climate. All plants have a zone of their own; their successful growth is dependent upon very small differences of heat, cold, moisture and aspect. You may find a solitary fern under a particular exposure, a small patch only, no other specimen being known in the vicinity. So with fruits, experiments with regard to which are by no means sufficiently tested to give proper information for all cases. The vine in Europe is an example, because it has undergone the test of time, stimulated by the profit much knowledge alone will impart.

It was formerly supposed that, by transplantation into different districts, the excellence of the better kind of wine would be preserved. If, however, the vine is removed from a warmer to a colder region, the saccharine contents, as a general rule, diminish; and they increase, if it is brought from a colder to a warmer district. Temperature and soil, together, determine, to a very great extent, the kind of grape. To no other cause can the perpetuation of the innumerable varieties be ascribed. Other appearances, however, in the character of the wine, says Professor Mulder, teach us that the soil may be exhausted just as much by the vine as any other plant. There are districts in France where very famous wines were formerly made, and where only inferior kinds can now be produced. The wines of Orleans are now considered very inferior to those of Burgundy, whereas, formerly the reverse was the case. It may be said the vine is an alkaline plant; give it potash enough, and the wine will be better. But this is not the case. Orleans yields wine enough—a proof that there is potash enough in the ground, and yet the wine is no longer so good as formerly.

Now, as regards climate, we have yet these things to study, and they must be studied carefully, and in some measure by local societies, which should turn their attention particularly to this point. No American Pomological Society can establish a code for the Union, unless aided by State, county and city societies. We have a large field for study, and those individuals who will confer the greatest benefits on their fellow-men, will be those who will promulgate accurate information from their own districts. The "unfortunate" Pear controversy owes its origin to an attempt to lay down the law from the success of particular localities, and so it will be with the grape, if we are not careful. Mr. Yardley Taylor makes a valuable contribution on the subject of Climate, &c., in the present number.

THE ADVISORY AGRICULTURAL BOARD had a good time at Washington, and it is hoped some good will grow out of it. Col. Wilder has thrown his energetic mind into the matter, and hopes for great things. Mr. Holt went with the members to see President Buchanan, and Mr. Wilder addressed him as follows:

"Mr. President: We appear before you, as has been stated by the honorable Commissioner, as a body of Agriculturists, who are assembled as an Advisory Board, at his invitation, and under the sanction of the Secretary of the Interior. We have been for several days engaged in the performance of our duties, and hope that they will not only be serviceable to the department, but beneficial to our own districts, and to the whole country at large. Agriculture is the great business of our people; it is the great source of national and individual wealth. And when we consider the vast extent of our territory, embracing almost every variety of soil and climate, and capable of producing almost every agricultural product of the world; and when we reflect upon our rapidly-increasing population, already spreading 'themselves down our mountain slopes and over our broad valleys—a population which, ere the close of the present century, will, in all human probability, reach two hundred millions of souls, it then becomes a matter of vast moment that the interest of Agriculture should receive the fostering care and patronage of the Government, and that this branch of industry should be advanced to its highest state of cultivation. This, Mr. President, is the mission of the farmer. And, believing that you would sympathize with us in these views, we could not return to our several homes without paying you our personal respects, and expressing to you our most sincere desire for your health, welfare and future usefulness. Long may you continue to enjoy the confidence of a grateful people, and the consolation resulting from a well-spent life. And may your last days be your best days."

To which the President responded cordially.

MULDER ON WINE.—In the last number will be found some extracts from Professor Mulder's work on "The Chemistry of Wine." The first chapter only is devoted to the grape vine, and that is not of very especial value to horticulturists, though we have marked some passages for insertion. The remaining part of the work is chemical, and although lucid, is not of a popular character.

G. J. Mulder is professor of chemistry at Utrecht, and has devoted many years to the analysis of wines. He is of opinion that with the improvements in chemical science adulteration will increase, and he defines adulteration to mean, "everything added to, or taken from the fermented grape juice, (even the clearing it with albumen, or isinglass, or the addition of substances containing tannic acid, in order to supply a deficiency of that acid,) is adulteration." Even sugar added to wine sophisticates it, and coloring ingredients are included; and inferior wines mixed with others; when water is added to strong wines or alcohol to weak, all alike are condemned. What we want is the pure fermented juice of the grape, an article, be it remembered, we rarely if ever get.

He declares that fetid manures exercise a very prejudicial influence on the color of wine, while on the contrary, manures which are inodorous and putrify slowly, such as wool, horn, and bone-black, conduce very much to its fragrance. The putrifying of the fecal matters and mud of great towns pass in such large quantities into the plant, that they are observable in the fruit; as in the cabbage and cauliflower, we recognize the smell of the putrid fish used to manure them.

"Inorganic manures," continues the professor, "are as important to the plant as the soil itself. The organic manure is also of consequence to the plant; if it is very nourishing a larger quantity of wine will undoubtedly be produced, but the wine will not be so well scented nor so well tasted.

"The leaves of the vine, which contain a considerable quantity of alkali, constitute an excellent manure for the plant. At the vintage only the fruit is removed from the field, and the

leaves fall to the ground, when their ashes necessarily compose the best manure for the future vine leaves. Only in this manner can the fact be explained that the vine requires so little inorganic manure, and often contents itself with substances which it obtains principally from the weather-beaten rocks on whose slope it is planted.

"On an average they reckon in the vine districts of France, to the hectare ($2\frac{1}{2}$ acres) of ground, in the region of Toulouse, 462 gallons; in that of Garillac, 352; and a yearly total of 979 million gallons; while in all the German States the yearly consumption is given at 58 $\frac{1}{2}$ million gallons."

The work was issued in its English dress last year in London.

WIRE PLANT SUPPORTS.—The demand for ornamental stands for halls, passages, and parlors, has caused inventors to exert their ingenuity to produce articles of luxury such as we exhibit in present engraving, and in great variety. This pattern recommends itself by its symmetrical appearance, no less than its just proportions, and will be found very useful in those apartments where a daily change can be kept up by those who possess a greenhouse or a good glazed pit.

J. JAY SMITH, ESQ. :—DEAR SIR :—I notice in the January number a call for information concerning Schooley's method of preserving fruits, &c. As you will notice by the plans and cut annexed, I am the assignee for New York and Pennsylvania, and have used Schooley's plan two years as a pork house for summer curing. In 1858 our house summer-cured 20,000 hogs, and we have now on hand 150 tons of ice, having used about 300 tons.

Mr. Phoenix, I think, is not aware of Schooley's improvement of 1857, which used less ice than the plan of 1855, with which it is also combined. With reference to preservation, I have seen eggs kept an entire season; beef three weeks; ripe peaches and pears forty-five days; milk 20 days: Havana oranges and lemons, six months; and have just concluded an experiment with Black Hamburg grapes, from Mr. H. Williams' grape-ries in this city. Jan. 10th, these grapes were in splendid condition, when Mr. Williams took them away.

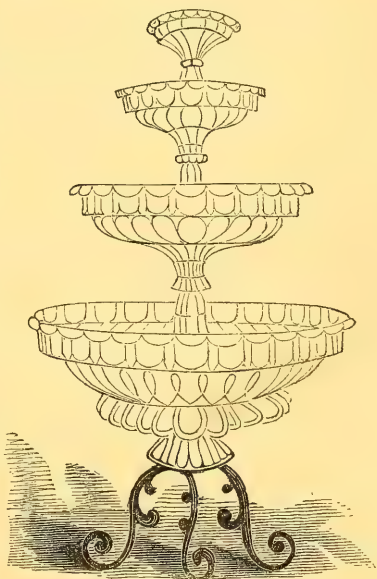
Yours, respectfully,

J. L. ALBERGER.

CATALOGUES, &c., RECEIVED.—Grape vines, fruit trees, &c., for 1858-9. E. Miles, Sag Harbor, Suffolk county, L. I.

THE NEW EDITION OF Downing's Landscape Gardening, with a supplement, by H. W. Sargent, Esq., of Wodeneth, North River, is nearly ready for publication. It is a beautiful tribute from a most successful amateur, Mr. Downing's literary executor, and is in all respects truly valuable. No one can plant the present spring without consulting its lists of new trees, and no lover of books and literature but will admire the execution, and the information of the letter press. It arrived as we close our columns, and we must speak of it more at large in our next issue. A. O. MOORE, publisher.

AMERICAN WEEDS.—Mr. George Thurbur has edited a handsome illustrated edition of Dr. Darlington's American Weeds and Useful Plants, which is also on the point of being published by Mr. A. O. Moore, of New York.



VERBENAS.—Dexter Snow, of Chicopee, Mass., has issued his annual catalogue of new and old Verbenas, which we commend to all.

CINERARIAS.—Mr. Daniel Barker sends us a noble collection of blooms of *new* Cinerarias, equalling any ever produced abroad.

Affleck's Southern Nurseries, Washington, Adams county, Miss., and Central Nurseries, near Brenham, Washington county, Texas. Good and at reasonable prices.

List of valuable ornamental plants cultivated by Negley & Co., Pittsburgh, Pa. A vast amount and variety of valuable novelties and old favorites.

Catalogue of Plants, &c., for sale by Edgar Sanders, Lake View, Chicago, Ill. A good list from a good cultivator.

The Statistics of American Agriculture. An Address before the American Geographical and Statistical Society. By John Jay, Esq. New York: D. Appleton & Co. We shall have something to say of this soon.

Illustrated Catalogue of Ornamental Iron Work, manufactured by Janes, Beebe & Co., 356 Broadway, New York. Highly creditable to the manufacturers.

Circulars of Langdon & Cherry, with lists and prices, Nashville, Tenn.

The Rural Annual and Horticultural Directory. By Joseph Harris, Genesee Farmer. A very useful manual that we should be glad was on the table of every farmer, &c., in the Union and Canada.

General Descriptive Catalogue of Fruit and Ornamental Trees, &c., &c., for sale at the Bloomington Nurseries. By F. K. Phoenix. This is one of the most suggestive catalogues extant. Hear how Mr. Phoenix chimes in with the topic discussed elsewhere in our pages: "God bless Young America, and save him from his friends! Tell me, why should not our young men and women understand well about ordinary fruits, flowers, vegetables, and their cultivation; what were sooner looked for from our abundance of land, agricultural produce and boasted refinement? Does not America rather seem like a vast encampment, ready to be broken up in the morning? Where are our gardens and gardeners, our schools and school-books for agriculture and gardening? Behold the inevitable yet needless failures in that simplest of operations, tree-planting," and so forth.

THE PROCEEDINGS OF THE SEVENTH SESSION of the American Pomological Society, Sept., 1858, have appeared in a very neat pamphlet, and may now be consulted with advantage. The lists of fruits recommended, those that promise well, and those rejected, are a matter of interest to readers generally. The American Pomological Society is the best one of its kind, and we hope will be encouraged to carry out the views of its designers.

Wholesale catalogue for spring of 1859. Du Page County Nurseries, Naperville, Illinois, Lewis Ellsworth & Co., proprietors. Excellent.

Wholesale catalogue of the Great Valley Nurseries, near the Great Valley Depot, on the N. Y. and Erie R.R., by S. T. Kelsey & Co.

"The House:" A Pocket Manual of Rural Architecture. New York: Fowler & Wells.

ANSWERS TO CORRESPONDENTS.

A. H.—The yam alluded to is the *Dioscorea Batatas*—see Dr. Hollick's communication in the present number.

W. L.—For a handsome hanging plant "without cost," take a smallish sweet potato that has roots hanging to it, and insert it in a hyacinth or other glass, just as you would a hyacinth. In a warm room you will have beautiful roots in the water, and a charming foliage somewhat like ivy, over-hanging in beautiful festoons. Other experiments that will please you may be tried by excavating the lower parts of carrots or turnips, filling the hole with water regularly as it is absorbed or evaporated, and very soon you will have beautiful foliage that will amply repay your slight trouble.

THOMPSON.—There is such an apple as "Victuals and Drink;" its synonymes are "Big Sweet" and "Pompey." Sweet, large; in perfection from October to January, but keeps till April. It is but a moderate bearer.

PEARS.—X. Y.—Experience proves that it is better to have grown *only on quince* roots, Duchesse d'Angouleme, Beurre d'Amalis, Beurre Capiamont, Beurre Diel, Golden Beurre of Bilboa, Doyene Goubault, Summer Franc Real, Buffam, Baron Mello, English Jargonelle, Forelle, Julienne, Kirtland, Louise Bonne de Jersey, Vicar of Winkfield, Van Mons Leon Leclerc.

The following sorts do well on pear, but are *better on quince*: Brandywine, Beurre Goubault, Brown Beurre, Easter Beurre, Oswego Beurre, Beurre Superfine, Beurre d'Aremburgh, Doyenne d'Ete, Duchesse de Berri, Dearborn's Seedling, Glout Morceau, Jalousie de Fontenay, Madeleine, Napoleon, Osband's Summer, Rostiezer, Winter Bell, Triomphe de Jodoigne. Exactly Equal, Virgalieu.

Well on quince; but are *better* on pear stock: Bartlett, Beurre Giffard, Beurre d'Anjou, Beurre Langelier, Grey Doyenne, Beurre Gris d'hiver nouveau, Bonne Chretien, Bloodgood, Belle Lucrative, Duchesse d'Orleans, Henry Fourth, Moyamensing, Passe Colmar, Seckel, Steven's Genesee, Swan's Orange, Tyson.

The following sorts succeed *well* only on the pear stock: Andrew's, Beurre Bosc, Beurre Clairgeau, Dix, Beurre d'Angleterre, Doyenne Boussoch, English Bergamotte, Gansel's Bergamotte, Flemish Beauty, Josephine de Malines, Heathcote, Kingessing, Lawrence, Marie Louise, Paradise d'Automne, Sheldon, Urbaniste, Washington, Winter Nelis.

ERRATA.—Page 71, for *vines* read *wines*, line 6th; for *views* read *vinery*, line 27th; for *ap- plication* read *appellation*, line 33d of Mr. Eaton's communication.

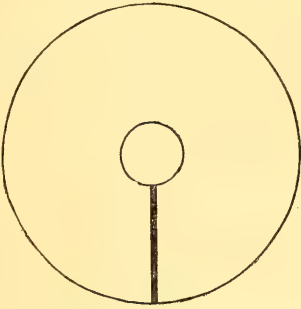
Gossip.

TEMPERATURE.—Mr. O. C. Jones asks, on whose make of thermometer he is to place reliance, and if there be any standard one to test the accuracy of instruments bought? "O. C. J." may test his own very simply. There are two standard points on the scale of a thermometer, viz: the boiling and freezing points; and a third very nearly so, the zero. If "O. C. J." will insert his instrument in boiling water (the barometer being at 30 inches), the mercury ought to stand exactly at 212 deg. If he then insert it in melting snow or ice, it ought to stand exactly at 32 deg. Then, providing the tube be accurately made, and the scale properly graduated, all the intermediate points will be accurate; by continuing the same above 212, and below 32 deg., all the rest would be, also. The scale-bore of tube between 32 and 212 deg. may be verified by mixing equal or proportionate quantities of water of known temperature together, when the inserted thermometer ought to indicate a proportionate temperature on the scale, if the bore of the tube be accurate, which is perhaps never the case, though sufficiently so for all practical purposes. To find the zero-point, equal quantities of snow or pounded ice and common salt, mixed together, produce it very nearly. In speaking of the accuracy of intermediate, &c., points between boiling and freezing, I have, of course, not taken into account the small error occasioned by the ratio of expansion of glass tube and scale.

W. G.

GRAPE CULTURE IN CONNECTICUT.—There is an association in Connecticut for promoting the culture of the Grape. At the convention, held a few days ago, it was stated that 50,000 gallons of wine were made there last year, and the quantity for the coming season is estimated as high as 100,000 gallons.

POT SOIL PRESSERS.—The following is a pattern of a pot soil presser; the hole in the centre is for the plant stem. There is always a difficulty in examining a fresh-potted plant, on account of the mould falling away from the root when turned out. The accompanying can be laid on the top of the soil in the pot, and pressed down with one hand while the pot is removed with the other. They can be made of earthenware, wood, leather, &c. Of course, various sizes can be made, as required.



AN OLD SUBSCRIBER.

EFFECTS OF EXTREME COLD.—The Salem (Mass.) *Register* says that during the late cold spell, the earth and ice cracked frequently with a loud report, and in one instance a large linden-tree, on Oliver-street, was split from the roots to the top of the trunk, with an explosion like a piece of ordnance.

STANTON'S "Entomologist's Annual," 12mo., pp. 173, goes on with unabated interest. The little volume before us, for 1859, besides having a nice colored figure of rarities captured during the season, contains a valuable paper by Dr. Hagen, on British Phryganeids, a list of all living British Entomologists, except those living in London, and a copious catalogue of the new British Hymenoptera, Coleoptera and Lepidoptera. (Will our Entomological friends pardon us for dismissing the pedantic Latin terminations of these familiar words?)

ANOTHER number of the *Flore des Serres* has arrived, so that M. v. Houtte is rapidly making up his lee-way. The number for September, 1857, contains original colored figures of the beautiful *Begonia Rex*, *Veronica Syriaca* (a very clever figure), *Gesnera cinnabarina*, and *Iochroma coccineum*, a Mexican greenhouse shrub, with long scarlet tubular flowers.

THE STUYVESANT PEAR TREE.—A sketch of New York could scarcely be complete without a notice of "the oldest inhabitant," on the corner of Thirteenth street and Third Avenue. No royal Charles was ever concealed in its branches, nor charter ever hidden in its trunk, nor was it ever the rallying-place for patriots, to give it a special claim to particular mention among revolutionary relics and associations. Yet there it stands, perhaps the only immovable body in the city, during all the varied changes that have characterized the city of New York from the days of the respected Petrus Stuyvesant's Dutch governorship, upwards of two centuries ago, to the present time.

On the forenoon of Evacuation Day, the British troops were mustered near to it before leaving the city. The American troops were towards Harlem on the other side of it, and the pear-tree, that still bears fruit in its season, is certainly now the only "living inhabitant" that "witnessed" the joyful change from foreign to domestic rule.

Only a few years back, there were many ancient buildings, the residences of persons of note, left in this city, but they have all been cleared away to make place for others adapted to the times.

Correspondence.

Washington, D. C., February.

DEAR HORTICULTURIST:—What would you like to hear about Washington? Doubtless not politics, but some information like the following: "The improvements agreed upon with Mr. Downing are all carried out, and we shall soon see one of the handsomest examples of

planting and good keeping in the public grounds, that the world can exhibit. This is in accordance with the public wishes, and I am sure *you* will rejoice to hear it."

Such information it would have afforded me immense pleasure to communicate, but unfortunately it would not be true; and as your reputation for correct statements was made long ago, let me tell you how the matter stands at this moment.

Downing died just after the first effort at spring planting was made; he placed a number of fine trees around the Smithsonian Institute, among which were many evergreens; he also partially laid out the grounds. Lafayette Square, opposite the President's house, was also partially planted, and has had some proper care bestowed upon it, more by the efforts of a private benefactor than the authorities. The large space between the Smithsonian and the President's grounds was left for future operations; this was designed for an evergreen, or winter-garden, and was to have been a sheltered winter drive and walk.

The evidences of the skill of the planter and landscape gardener are seen around the Institute; Downing there left his mark in the bold sweeps of the roads and in the original planting; the evergreens that have survived neglect, or succeeded under utter bad treatment are there, though many are ruined, and the whole, if something is not done, will soon be in a similar condition; presently you shall learn the reasons. These Smithsonian grounds are now a disgrace to the nation; early efforts were made by breaking the soil properly to lay it down in good sward, but neglect has rendered all that expense,—and it was very great,—utterly nugatory. I should say it has been mown but once a year, and that it has not been rolled. It is now no better in appearance *than most farmers' timothy fields*. But that is not the worst of it. Some favored owner of a large lot of maple trees has got lately a contract to transfer them to these grounds; where, think you, has he had the good sense to place them? He has closely bordered the roads in a marvellous manner, and to show his knowledge of how to treat a good design, and how to preserve the evergreens already there, he has really planted a maple *in front and only a few feet from each, and before nearly every choice specimen*. Now, what will be the result unless some kind authority steps in at once and removes them? Why, just this: the maples will soon overtop the evergreens, spoil them and the design, and a new authority will ere long cut away the evergreens to make room for the maples! No attention to, and no kind of appreciation of, Mr. Downing's plans has entered into either the new planting or the care of these grounds.

New officers, as they come in, derange the plans of their predecessors. Nothing in Washington is consistent or stable.

I asked no questions of whose work was this or whose plans were those; I saw only the utter desecration, and turned away more in sorrow than in anger. Walking round the costly Smithsonian building to which so much attention was given, what a surprise awaits you at the front door; the house has been bepinnaeled and plastered enough, but apparently the artist forgot the coal-hole. There is at this moment some forty cart-loads of coal ashes thrown out in heaps before the door and on the (proposed) lawn! Shame, shame, where is thy blush; how will you, my dear *Horticulturist*, like to show that and this to foreigners, or to your own neat readers? How will you redden when Sir William Hooker, fresh from the admirable neatness of Kew Gardens, strolls about these *national* efforts at the sublime? Truly, I hope he may not be taken there, and I wish it had not been my duty to go!

But perhaps the winter-garden is better. Let us see. Mount the worm-eaten stile and look over at the evergreens. Not a single one! Is there nothing? Oh, yes! plenty of planting! And pray, what are those bean and hop poles for;—no doubt to shelter the young plantations of the rarest trees from every clime, which are to teach our people what trees are and what they may become; soon we shall see a change; the young growths will replace these maple poles, for at present it looks as if it were made for the Indians who come to see their "great father" to play a game of war-whoops and war-dances in! Alas! this fine domain is planted with maple and similar trees, all trimmed and topped in the most approved city style—all, including the Smithsonian grounds, *a great job!* Sixty acres and more devoted to jobbing

trees! Can it be borne? No! it cannot; it must not be! Yonder dome-crowned capitol is full of bedizenment, chalky frescoes, rooms lined with the finest marbles, sculpture and emblematic paintings; the poorest committee must meet in rooms with heraldic adornments; the naval, surrounded by flags and grand achievements, the military with guns and halberds painted on plastered walls; even the folders of the miserable, jobbed public documents, are to have a frescoed room! while we can get no proper planting. The coal-stokers and engineers who manage the steam engines that pump air into the exhausted lungs of our great national orators and Solons, have a palace carpet down in the cellar, amidst the ashes of their coal, to rest their weary feet upon. Just outside their delightful quarters, however, where the kindling wood is split, *and in full view* of these "admirable" pictures, frescoes, and statuary, there are the knotty pieces and the chips lying about to rot in the open space! The Smithsonian coal ashes in full view as you drive up, the kindling wood knots strewed everywhere as you here look down from "marble halls." A great country, you exclaim, but it is not all yet "fenced in!" Will it ever be? Will our people ever learn with such teaching? Never!

You would expect the greenhouse built for the President of the United States, and immediately under his gaze, would be a model of successful treatment, certainly. It is not in so healthy a state as a hundred private ones I could take you to. An unadvised attempt has been made to grow the *Victoria Regia* in the same house with the *Camellias*, &c.; the consequence is, the *Victoria* has been unsuccessful, and the *Camellias* have dropped their flowers from the heat and dryness. One would hope to see *perfection* taught here; but the new stables are wrongly placed, and shock the eye at the end of the Pennsylvania Avenue, where Downing intended the grand vista to terminate in a colossal gate like that at Berlin.

The plants in the Botanic Garden below the Capitol grounds look better, and there a new effort is being made not discreditable to our national pride. The glass-house built to receive the tea-plants is ready, but the roof will be too far above the young vegetation.

I have done for to-day. The proper representations have been made to the authorities—would that I could say they agreed to employ the proper persons! They express a willingness and even a desire, but they require the grand machinery of Congressional appropriations to do what many a private gentleman has done and is doing out of a moderate income; and the former appropriations, poor encouragement, have been worse than wasted. The question might be asked, do the proper authorities know *what is wanted*? J. J. S.

TEMPERATURE OF GREENHOUSES.—There has been already a great deal said on this subject; some say 40, others 50 degrees, is the best temperature for greenhouses. With me this month I keep as close to the above as possible, at night,—the former on dark cold nights, the latter in clear moonlight nights; and allowing the temperature to rise as high with solar heat as 80, and even higher before I ventilate; doing that with the top sash, and I do not believe it an injurious practice. Greenhouses lose considerable of their interest if they have little bloom, more especially private greenhouses.

By following my principles, you will have your house more gay and interesting during the dreary months when John Frost rules supreme, and you may go into your miniature garden and laugh him to scorn. But it must be remembered if there is a high temperature kept up, we must supply moisture freely by sprinkling or syringing. The closer we imitate nature the better. The night in the open air is almost invariably cooler than day; more especially the season we try to imitate. Plants grow more freely by day than by night: the night was made for rest, both for animals and vegetables, although there are a few exceptions in both cases. I have found that vegetation is more active in bright moon or full moon, requiring less fire to repel the same amount of frost. My attention was first called to this subject by the following facts, from my own observations. We have a conservatory thirty feet fronting south, twenty-seven fronting west. The sun had gone down in the western horizon, the glass in the sash on the south front gradually thawed as the moon wore round to the south. I had noticed this

circumstance long before, but always thought it was getting milder outside, or the flues were getting warmer inside: but I found I was mistaken, as the frost remained on the glass until the moon had gained a south-westerly position; then it began to thaw, at the same time commencing to freeze on the south front. The moon, in my opinion, acts the same as the sun, only to a lesser degree, in keeping up a high temperature. It requires a greater amount of care, but this comes at a season of the year when the gardener has the least to do. The nature and habits of the several species of plants, if possible, should be understood towards their proper management; thus supplying water equally to all, without regard to their stage of growth, or water supplied too freely in a state of inactivity, will rot the roots of most. When they are in an active state of growth, we should bear in mind the liquid manure, soap suds, &c.

I prefer raising the temperature rather than ventilating so early, as we lose so much warm moisture which is so genial to the growth of plants; always ventilating from the top if possible. In winter I have a potting room where I admit the air first, and it becomes somewhat tempered by the time it reaches the plants. I do not wish to be understood raising the temperature only in proportion to the light; in regulating plants upon stages it must be remembered that the top is the warmest, the lower the coldest: warmer air is lighter, the lower the colder; therefore one rises, the other falls. Also most plants kept in such structures come from a temperate climate.

Yours, &c.,

JOHN C. URE.

Chicago, February 1, 1859.

DEAR SIR:—One of the greatest annoyances a gardener has to contend with is the ravages of insects upon young plants. I have a remedy which I have applied for several years, and have never known it to fail. Take three parts air-slaked lime, or unleached ashes, and one part Peruvian guano, or any other substance containing a large per centage of ammonia; mix them well together, and dust the plants while the dew is on them, and apply it after every rain; but care must be taken that too much is not used at one time, or it will have a deleterious effect upon the plants; a light dusting is all that is necessary. I noticed the effect more particularly last spring, upon a patch of cantaloupe vines, which the yellow bugs were eating up. I dusted about one-half of the patch; the next morning there was not a bug to be seen on that portion of it, while they were literally devouring the other; but a dusting cleaned them all out in ten minutes so effectually, that I was not bothered again the balance of the season. I have found it to hold equally good for cabbage and other plants. I do not know the effect, unless it is in the ammonia being set free, which, perhaps, is a little too strong for their olfactory nerves.

My impression is that it would be a partial remedy, at least, against the curculio. I have never tried it, as I have no plum-trees yet in bearing; but I intend trying it upon my apricots the coming season, and, as it appears to be the determination to not leave a stone unturned until a remedy is found, will not some of your numerous correspondents try this? It is simple, and easily applied, and would it not be quite a victory over the "little Turk," and very humiliating to him, after standing all kinds of fire, at last to be compelled to surrender to *snuff*?

Yours, truly,

D. M. R.

Washington, D. C., Jan. 14th, 1859.

THE FRUIT CROP AND SORGHUM.—*Mr. Editor:*—The fruit crop in this section was an entire failure the past year. We had no peaches, a very slight sprinkle of pears, and in place of about five thousand bushels of apples, which I ought to have had, I did not get fifty bushels; and they were very inferior.

This winter has been rather of an open character, although the thermometer has been four degrees below zero once. If it continues mild it will injure the fruit crop again.

In one of your late numbers, you inquire about the success of the sorghum in the West, in answer to which, I am happy to inform you, that it is a settled matter as regards its profitability, yielding more than two hundred gallons to the acre, of very superior quality, selling readily at sixty cents per gallon, even when planted as late as July.

I have made well crystalized sugar, and have no doubt that sugar will be made in abundance before many years.

T. V. PETICOLAS.

Mt. Carmel, Ohio.

MR. EDITOR:—I have a small octagon-shaped conservatory under my charge, heated by one of Hitching's boilers; the stage stands in the centre, being the same shape as the house, about eight feet high; the reservoir and pipes under the stage being nearly the height of the same, and all painted green; in the winter when the pipes are heated, the plants instead of thriving and looking healthy,—the camellias especially,—wither and drop their buds; at the same time I can perceive a smell as of heated iron. The reservoir is kept full of water; if you or any of your readers can suggest a reason, or remedy, from the statement made above, they will confer a favor on your obliged

J. M.

New Haven, Conn.

BOSTON, MASS.—It is not a little curious to see your correspondents come out right side up after all the pros and cons. Hovey's *Magazine*, for January, publishes the "Report of the Committee on Fruits of the Massachusetts Horticultural Society, for 1858," and you may read on page 43 the following shocking paragraph; "guided by such light as is afforded by *personal experience of some duration*, and from such information as can be gathered *from some of the more intelligent sources*, it is believed, that though instances of success can be found, that such must be REGARDED AS EXCEPTIONAL, and that, taking the whole cultivation of the pear as it has been thus far generally pursued *in this vicinity*" (mark that) "in the aggregate, that it has not only been unattended with profit, BUT HAS ENTAILED A POSITIVE LOSS."

Causes are assigned and reasons adduced, but the fact is stated. Now, Mr. Editor, what was the use of all the outcry we have had? Colonel Wilder must have been absent when the report was read. *Oh! tempora, oh!*

MORE EASE.

DEAR SIR:—"What shall we do with our empty greenhouses in summer?" is a question often asked me. I recommend grape-vines grown in pots. They will pay, and will fill an otherwise desolate house. A regular succession may be kept up at a very trifling expense. First obtain two or three-year-old vines from reliable parties, and also the same number of one and two-year-old vines for a succession; and also strike double the quantity from eyes. Those two and three years old will fruit the first year; the next will take their place the year following, and so on, keeping up the succession. In the fall the pots may be kept in a dry cellar; during winter, the one set of pots (or tubs) will do for fruiting, and the old plants may be thrown away every fall. In some cases, where the vines have not fruited very heavily, keep them over for next year. I merely hint at the subject now, to draw out others who have more time.

Yours truly,

J. C. URE.

Chicago, Illinois.

ROSE AMERICA.—Mr. Thomas G. Ward, of Washington, D. C., brings out the present spring the rose America, a Noisette, and a cross between Solfaterre and Saffrano, to which great merit is ascribed in certificates of those who have seen it. We shall probably have an early opportunity of seeing and verifying the descriptions.

MR. PENTLAND, Baltimore, brings out his valuable new rose, the "George Peabody." See advertisement.

CATAWISSA RASPBERRY.—There appears to have been some surprise expressed at the report of the convention regarding this fruit, but whatever may be said to the contrary, there is no doubt of its value with us, and with all those whom we have conversed with. Both for amateurs and as a market fruit it appears to us to be very desirable.

THE DIOSCOREA.—The reader will find in the present number Dr. Hollick's article on this esculent, which is quite a favorable one. From another section of country—Virginia—we have also a good report. Mr. Oliver Taylor, of Loudon county, says: "Having grown this potato

each season since 1856, and tested its quality and productiveness, we now offer it to the public as a very great acquisition to the list of table vegetables. Being perfectly hardy, having stood the winters of 56 and 57, and equaling if not surpassing the Irish potato in quality and productiveness, it doubtless will take the place of that vegetable as soon as it becomes disseminated. The form of the root is club-shaped, from one to two feet long, the largest end down, and weighs from one to two pounds the first year, and if left in the ground for eighteen months the yield is three times greater. They can be dug for use the year round, and if stored away for winter use seldom rot or sprout in the least. A sandy or alluvial soil is preferable, but in any case it should be deep, as the roots descend straight down, which, with the tops being rather small, allows them to be planted very close. Small tubers are formed on the vines at the axil of the leaves, which grow into the ground and form suitable roots for planting. The eyes are very small and very numerous, hence they can be made to produce a great number of plants, but if cut in pieces as small as half an inch square, of course the yield will be proportionately small. They should be planted as soon as the ground will admit being worked."

EDITOR OF THE HORTICULTURIST:—Your printer has given me a fair excuse for a farther note from the S. West.

He makes me say that an orchard cannot be too "*highly*" cultivated and cropped."

To chime in with the context, as well as with my most devout and potent belief on the subject, the word should have been "*lightly*."

Thus, having a bit of suitable land, and desiring to raise, say, pears and potatoes, instead of mixing them half and half all over the land, I would plant all the pears on one plat, and all the potatoes on the other.

No plough has ever entered my orchard since it was planted, and I have yet to find a healthy peach tree, or I may say, a healthy fruit tree of any kind six years old, outside of my own enclosure. This is no boast, but a melancholy fact!

The land should not be "*highly cultivated*" in the common acceptation of these words; and it should not be cropped at all; but the surface should be kept clean, and the simple aliment required by fruit trees should be supplied.

Recent articles in the *Horticulturist* have induced me to make a thorough examination among the roots of my dwarf pears. I find them ever seeking the surface. If they were planted too deep, turning up; if planted properly, radiating horizontally, and spreading beyond my desire to trace them.

The great beauty and vigor of all the trees thus situated fairly countenance the experiment of an ingenious friend, who has *grafted surface roots* into his dilatory pears!

But, what is to become of this all-important furniture of a tree, under any system of earth-work known to a horse-hoe, it is easy to imagine; and as *high* cultivation and deep *ploughing* are nearly synonymous, we perhaps have the key to the sporadic success which has dotted the land with specimens of enormously large old pear trees.

Fruit, God's (next) best gift to man, has been most barbarously treated, and that it seems to be about taking its final departure from our earth (and markets) is, I think, as much to be attributed to "high cultivation" as anything else.

Skilful cultivation is another matter, and consists, according to my heresy:

1st, in the deepest possible preparation of a not exhausted or artificial soil.

2d, in the shallow planting of a young tree's *roots*.

3d, in the shallowest possible subsequent cultivation.

In my practice I avoid this latter item altogether; wishing merely to keep the surface clean, the green grass is simply *burned down* by igniting the debris of a previous combustion.

There is always a thin brown mat of scorched grass on the ground; this covers no small amount of fine charcoal and ashes, our *only* manure; and thus waits its turn to level its successors.

Fire is of course a dangerous element, but thus harnessed it cannot injure the trees, while the roots are amply protected by an inch or so of that non-conducting material, the earth.

In short, I know of no surer way to get a good orchard than to devote the *whole* of the ground to it. Very respectfully, F. O. TICKNOR.

Torch Hill, Columbus, Ga., Feb. 5, 1859.

P. S. Do not let your "market" friends demonstrate that it is not worth while raising pears at all, for it is my pleasant delusion that *one large Duchesse* is cheap at the expense of planting *one small tree*.

Miscellanea.

ROSE STOCKS.—It appears still to be a mooted question as to the merits respectively of the Dog Rose and the Manetti as a stock for budding roses upon. I have little to say in favor of the Dog Rose as a stock, which I have found within the influence of London smoke, to decay and deteriorate within three or four years of its being planted, and to do at all well, requiring particular attention, especially as regards rich soil and sufficient drainage; in addition to which there are some of the more tender Bourbon and Teas that cannot be persuaded to grow at all on that stock. I have therefore come to the conclusion that it is certainly not the best rose stock for ground that has been partially "used up." Again, the roots of the Dog Rose are most frequently tap-rooted and not generally fibrous, as in the case of the Manetti, which is not club-rooted, but sends out a number of short, fibrous kinds of root—the best for procuring nourishment from the ground. As a stock for potting, the Dog Rose is worthless; a rose on the Manetti may in one season be grown to double the size of one on the Dog stock, whereas for potting purposes generally, there is nothing like roses on their own roots. As regards the merits of the Manetti stock they appear to be as follows: To thrive in comparatively poor soil and without extreme attention. To make strong healthy growth, but not at the expense of bloom. Not by any means liable to decay, the stock swelling year by year and throwing off its bark, and thus procuring a healthy action, allowing it to expand, and freeing it from the attacks of insects which deposit their ova in the bark;—the size to which the stock in the course of two or three years will expand is altogether incredible. For pillar roses no stock can possibly be better; and whilst I have every year to grub up roses on the Dog stock that have "gone off" from the mycelium of fungi having attacked the clubbed roots, or from the smoky state of the atmosphere being more unfavorable to the Dog than to other stocks, I find that my roses on the Manetti, planted under exactly similar circumstances, not only do not go off, but thrive and grow most abundantly, and yield a profusion of bloom. I also find that when the head of the rose grows (as is most generally the case) luxuriantly, the stock never throws out suckers; but if from other circumstances it does, the sucker comes from the stem, and can easily be cut off, and not as is oftentimes the case with the Dog Rose, a foot or more from the stem, necessitating the grubbing up the sucker, and often in the operation disturbing the root. Moreover, by planting the Manetti stock deep, that is to say, up to where the stock is worked, all suckers from the stem may be avoided. Lastly, the Manetti encouraging healthy and luxuriant growth, the roses on it are not so liable to the attacks of the aphis and the "worm i' the bud," and I therefore, without any hesitation, give the palm to it for all purposes of out-door gardening, and where roses on their own roots cannot be procured. I must however say that I grow none but dwarf roses, and no standards, and it is to dwarf-budded roses more especially that my remarks have reference; although dwarf-budded roses may be grown to any height, say ten or twelve feet or more, as pillar roses, and which to my taste have more elegance and less formality than standards.—*J. R. S., in Gardeners' Chronicle.*

RHODE ISLAND HORTICULTURAL SOCIETY.

At the Annual Meeting for the election of officers, ect., Wm. S. Patten, Esq., was chosen Chairman. There was a good attendance of members, and an excellent exhibition of fruits and flowers. There were a number of bananas on the table, from Edward Harris, of Woonsocket, the first fruit of this kind ever raised in Rhode Island.

The Treasurer presented his Annual Report, from which it appears that the Society, after cancelling all its debts, has purchased an additional share of bank stock, making the entire amount thus invested \$800. The receipts for the year were \$487.75; expenditures, \$441.31; leaving a cash balance of \$46 41. The report was received and placed on file.

The Committee, to whom was referred the subject of nominating a list of officers for the ensuing year, reported as follows:

President—Wm. W. Hoppin. *Vice-President*—William Viall. *Treasurer*—James H. Bourn. *Corresponding Secretary*—William S. Patten. *Recording Secretary*—J. Driscoll.

The following votes were passed:

Voted, That the Society will hold an Exhibition of Fruits, Flowers, and Vegetables, for premiums, in June next, at such time and place as the Executive Committee shall determine and publish.

Voted, That the Committees on Fruits, Flowers, and Vegetables, report to the Executive Committee a list of premiums for the June exhibition in season for the Executive Committee to report the same to this Society at its next meeting.

Voted, That the Executive Committee report at the next meeting upon the expediency of engaging some distinguished friend of horticulture to deliver a public address, in connection with the next June Exhibition,—and that the same Committee report on the expediency of an independent, or associated, Fall Exhibition of this Society.

On motion of Mr. Bourn, the sum of \$200 was appropriated for premiums at the June Exhibition.

Eleven persons were voted in members of the Society.

ADRIAN (MICH.) HORTICULTURAL SOCIETY.—The following gentlemen were elected officers of this Society, at its last annual meeting:

President, Wm. H. Scott; Vice-President, L. G. Berry; Secretary, Dr. W. Owen; Treasurer, Sam'l Lothrop; Librarian, B. F. Strong. Executive Committee, D. K. Underwood, L. G. Berry, Mr. Perkins, B. F. Strong, S. Lothrop.

This Society has now been in existence a number of years. It has from time to time received such liberal additions to its library, that those of our citizens who are fond of beautifying their homes, and who would make the best use of their time in their hours of leisure from business, could not do better than to take advantage of the varied information they afford, by becoming members. All the standard works on House Architecture, on Fruits and Flowers, and on Arboriculture generally, including Michaux's expensive colored edition of our North American Sylva—in all, making a library of over one hundred and fifty volumes; and all the best monthly and weekly Horticultural periodicals in this country may be found in the Society's library, and freely drawn by all members.—*Michigan Paper*.

THE NEW PLANTS OF 1858.

[From Turner's London Florist.]

WE offer with the new year our usual summary of the novelties of the past season. In doing this we wish it to be understood that it is the most prominent of those which have appeared in public, or have been figured or noticed in the various botanical and horticultural publications, that we here bring together for ready reference. There are, no doubt, others, which have found their way into gardens, which have not taken so prominent a position, or which we shall hear of hereafter.

GREENHOUSE AND HARDY PLANTS.—As ornaments to the conservatory and greenhouse, we have several very choice kinds of Indian Azaleas, offering variety and advance; one or two

very nice new Camellias; and some of the new Indian Rhododendrons, of which *R. Nuttalli* carries the palm over all previously known: *R. Boothianum* is interesting on account of its color—a clear primrose yellow; while the dwarf *R. virgatum* is a little gem. Of another character, but possessed of considerable merit, are the *Cianthus Dampieri*, with its oddly-shaped richly-colored flowers; *Cynoglossum nobile*, the Forget-me-not of the Chatham Isles; *Solanum capsicastrum*, a dwarf bush studded with vermilion-colored fruit about the size of nuts; *Lobelia trigonocaulis*, a dwarf blue-flowered plant likely to be useful for bedding; and *Darlingtonia Californica*, a singular and novel kind of Pitcher-plant.

To the class of hardy trees and shrubs we add—*Æsculus californica*, *Amygdalus persica* v. *caryophyllæflora*, and *Rhododendron Bysianum*, all charming showy flowering plants; and *Ilex cornuta*, *I. Fortuni*, *Olea ilicifolia*, and *Torreya grandis*.

The out-door flower garden has received as acquisitions the blue *Pentstemon Jaffrayanum*, the purple *Saxifraga purpureascens*, the striped *Phlox Triomphe de Twickel*, and a rose-colored *Solomon's Seal*, among perennials; and *Cosmanthus grandiflorus*, *Oenothera bistorta* v. *Veithiana*, and *Tropæolum majus*, a dwarf scarlet variety called *Tom Thumb*.

Amygdalus (Persica) caryophyllæflora. The Carnation-flowered Peach. A charming variety of the Peach introduced from China, the blossoms large, nearly full, double, pink, flaked with rose-color.

Apteranthes Gussoniana. One of the curious succulent plants related to *Stapelia*. It has quadrangular toothed stems, and near their apices bear umbels of small star-shaped flowers, on short stalks; they are pale yellow transversely banded with dingy purple. It is a greenhouse perennial. Algeria.

Aralia Sieboldii.—A fine greenhouse shrub, with large bright green glossy leaves. Japan.

Azalea indica, var. *Alexander II*.—A beautiful novel variety, having large white wavy flowers, as in *crispiflora*, marked with few broad streaks of bright red. A Belgian variety.

Azalea indica, var. *Distinction*.—A beautiful vigorous-growing variety of excellent properties, said to have been raised from *Barclayana*, fertilized with *Criterion*; flowers rich salmon, margined irregularly with white, and occasionally striped with carmine, the upper segments densely spotted with crimson. A garden variety.

Azalea indica, var. *Duc de Brabant*.—Flowers large, of a light rosy salmon, with rich crimson spots on all the lobes, and a tuft of petaloid stamens in the centre. A Belgian variety.

Azalea indica, var. *Etoile de Gand*.—Flowers large, round lobed, white, with a delicate rose-colored mark in the centre of each lobe, forming an elegant star-like centre, and having lines of carmine spots on the upper segments. A Belgian variety.

Azalea indica, var. *Leopold I*.—A Belgian variety, flowers large, rich rose-color, the upper lobe spotted with crimson; a tuft of petaloid stamens in the centre.

Azalea indica, var. *Perfection*.—A robust-habited variety, with large flowers of excellent form, and of a lively rose-color, thickly spotted on the upper segments. A garden variety.

Azalea indica, var. *Reine des Panachees*.—Flowers large, white, striped and spotted all over with rose-color. A Belgian variety.

Barklaya syringæflora.—A fine greenhouse shrub, with orange yellow flowers in the way of a Persian Lilac, only of an orange yellow color. Moreton Bay.

Callicarpa purpurea.—A hardy greenhouse shrub, with sharply serrated leaves, in the axils of which appear bunches of insignificant flowers succeeded by small shiny purple berries resembling glass beads, which are very ornamental, and remain all the winter on the plant. China.

Camellia Japonica, var. *Cup of Beauty*.—A handsome Chinese variety, with something the character of the old double white; pure ground color, with an occasional streak of pink, the centre well filled.

Camellia Japonica, var. *Princess Frederick William*.—A very handsome variety of the striped class, with imbricated close flowers: the ground color blush, with stripes and varied markings of pale rose-color, in the way of *Alberti* or *Prince Albert*. China.

Camellia Japonica, var. *Vergine di Colle Beati*.—A curious white imbricated variety, in which the petals are ranged in seven curving or spiral lines, instead of alternating throughout in the usual way. An Italian variety.

Camellia roseiflora.—A single-flowered *Camellia*, the flowers of a rose pink, and small; cultivated as *C. euryoides* (incorrectly) for many years at *Keio*.

Campanula strigosa.—A dwarf hairy annual, 4–5 inches high, scarcely branched, with oblong-ovate leaves, and largish bell-shaped deep violet flowers, with a yellowish white tuber. Syria.

Cianthus Dampieri.—A splendid flowered greenhouse soft-wooded subshrub, of rather difficult management.

Colletia cruciata.—This is the plant known as *C. Bictonensis*. It is a singular shrub, half hardy or hardy in the most favored localities, producing creamy-white bell-shaped flowers. The stems consist of thick spine-pointed triangular lobes, in pairs, set alternately in opposite directions. Banda Oriental.

Cynoglossum nobile.—A very remarkable and handsome dwarf greenhouse perennial herb, with very broad thick cordate furrowed leaves, having 5-7 strong parallel nerves. The flowers, which are like those of Forget-me-not, but larger, grow on scorpioid scapes, about a foot high, and are blue edged with white. Chatham Island.

Darlingtonia Californica.—A curious two-horned side-saddle flower, or *Sarracenia*, one of the plants forming pitcher-like leaves. California.

Dasyllirion acutrichum.—An Asparagineous greenhouse Yucca-like plant, forming a spreading crown of long slender thickish leaves, and producing from the centre an erect flower-stem, about 16 feet high, three or four feet of the upper part of which consists of a crowded series of spikelets, bearing insignificant green flowers. The beauty of these plants lies entirely in their habit. Mexico.

Dasyllirion glaucophyllum.—Another fine Asparagineous greenhouse plant, with a large spreading head of narrow glaucous rigid leaves of Yucca-like habit. The flowers are in crowded spikelets, collected into a long compound spike at the top of the tall central erect flower stem, 10-12 feet high. Mexico.

Digitalis purpurea, var. *gloxinioides*.—A fine variety of the common Foxglove, the flowers white or flesh-color, with deep blotches of crimson, resembling a Gloxinia.

Eugenia Luma.—The *Eugenia apiculata* of gardens. It is a fine Myrtaceous and Myrtie-like hardy or half-hardy evergreen shrub, with oval oblong sharp-pointed leaves, the branches loaded during summer with its white blossoms. Chili.

Fieldia Australis.—A straggling greenhouse shrub, with opposite ovate-lanceolate acuminate leaves, and pendulous pale greenish-yellow tubular flowers for their axils. Australia.

Fritillaria græca.—A neat, hardy, bulbous perennial, with short, slender, erect stems, linear-lanceolate leaves, and nodding flowers, borne singly or two together, pale reddish brown, with a green border. Mount Hymettus.

Gardenia citriodora.—A fine representation of this profuse-blooming fragrant warm greenhouse shrub is given in the *Illustrated Bouquet*.

Gardenia radicans, var. *major*.—A most desirable variety of a highly popular plant. It is distinguished by its more robust growth, its more oval and less lanceolate deep green leaves, and its larger blossoms, which, like the parent, are pure white and fragrant. A garden variety.

Gaultheria discolor.—A small hardy Ericaceous shrub, with obovate-lanceolate leaves, longitudinally ribbed and silvery beneath, and short axillary racemes of white pitcher-shaped flowers, with small pink lobes. Bhotan.

Grammatocarpus volubilis.—A slender half hardy climber of the Loasa family, having opposite bipinnatifid leaves and curiously formed yellow flowers from the forkings of the stem. It is sometimes known as *Scyphanthus elegans*.

Hydrangea cyanema.—A half hardy under shrub, with broad ovate toothed leaves, and corymbs of white (the neuter) flowers streaked with red. Not equal to the common kinds. Bhotan.

Ilex aquifolium, var. *pendulum foliis variegatis*.—A fine weeping variety of Holly, with prettily variegated leaves. A garden variety.

Ilex cornuta.—This fine evergreen shrub seems to be quite hardy. Its leaves are remarkable in form, having one or two marginal spines and the apex dilated with usually three spiny spreading horn-like points; flowers small, white, axillary. China.

Ilex Fortuni.—A handsome evergreen shrub, resembling *I. cornuta* when young, but having, when more mature, broad entire leaves. It becomes very ornamental when loaded with its red berries, which come in umbels from the axils of the leaves. North of China.

Indigofera decora. This is a good figure of this charming greenhouse shrub, which is not so common as it deserves to be.

Ligustrum sinense.—A deciduous and apparently hardy species of Privet, with slender downy branches, oval-obtuse leaves, and panicles of small white flowers, somewhat resembling those of the common kind. China.

Lobelia trigonocaulis.—A handsome decumbent half hardy or greenhouse perennial, having laciniate subpinnatifid leaves and large axillary flowers, blue with a white centre, resembling those of *L. ramosa*, but paler. It is a free-flowering plant, and will probably be useful for bedding out. Moreton Bay.

Lomatia elegantissima.—An extremely elegant evergreen greenhouse shrub, with Fern-like foliage. New Caledonia.

Lugonis Hartwegii, var. *caestinus*.—A very distinct variety of this ornamental annual; the flowers of a delicate pale blue, pink at the edges. A garden variety.

Nolana paradoxa, var. *violacea*.—A variety with larger flowers, of a distinct rosy violet color. A garden variety.

Olea ilicifolia.—A hardy evergreen shrub, with large handsome foliage; flowers pure white, twice the size of *Olea fragrans*, and as finely scented. Japan.

Pentstemon Jaffrayanus.—A fine hardy or half hardy herbaceous perennial allied to *P. speciosus*.

sus. The leaves are glaucous, entire, the lower ones spatulate; the flowers in long terminal panicles, large bright blue, stained with deep red at the base of the tubes. It is a charming plant. California.

Pinus Bonaparteae.—A distinct species of the Weymouth section; the leaves in fives, slender, 2-4 inches long; the cones a foot long. *P. Durangensis* seems to be a smaller state of the same plant. Mexico.

Pinus Don Pedro.—A splendid tree, 35-45 yards high, with long flexible branches: the leaves fine, five in a sheath, six inches long, glaucous; cones very large, 14 inches long, 5 inches in diameter. A Pine of the Weymouth section. Mexico. 8-9000 feet elevation. *M. Roezl*. Several other new Pines have been introduced from the same source, but there are strong doubts of their distinctness.

Phlox decussata, var. *Triomphe de Twickel*.—An extremely beautiful Belgian variety of the hardy herbaceous section of the family, remarkable for having its abundant flowers of a light rose purple, with a broad distinct margin of white down each side of the segments of the limb.

Polygonatum punctatum.—A hardy herbaceous tuberous perennial, related to *Convallaria*, with ovate lanceolate leaves, and two-flowered axillary peduncles, the flowers being small, erect, whitish, tipped with green. Bhotan.

Polygonatum roseum.—A pretty hardy herbaceous tuberous perennial. It has oblong lanceolate leaves, frequently growing in threes, and from their axils the pretty pale rose bell-shaped flowers spreading or often decurved appear, frequently in pairs. Siberia.

Prostanthera cuneata.—A dwarf greenhouse shrub, with small obtuse leaves and lavender-colored flowers prettily spotted with blue. Australia.

Rhododendron argenteum.—A fine hardy or half-hardy shrub, with large oblong-obovate leaves silvery beneath, and dense heads of flowers, pale rose color in the bud, changing to cream color and white. Sikkim Himalaya.

Rhododendron Boothii.—A desirable neat-growing shrub, with ovate-lanceolate leaves, more or less hairy, and heads of moderate size, primrose colored flowers. Bhotan.

Rhododendron Bylsianum.—A charming hardy evergreen shrub, producing large heads of brilliant flowers, in which the centre is white and the border lively rose color. A Belgian variety.

Rhododendron calophyllum.—A fine compact growing evergreen greenhouse shrub, the flowers large, white, fragrant. Bhotan.

Rhododendron Nuttallii.—The most magnificent of the Indian *Rhododendrons*, as far as yet known. It forms an evergreen shrub with large broad veiny leaves, stems terminating in a colossal corymb of large white blossoms, which are about six inches in diameter, and nearly as much in length, stained at the base of the cup with pale orange, very fragrant. Bhotan.

Rhodoleia Championi has been bloomed for the first time in England, during the spring of 1858, by Mr. Fleming, of Trentham. The flowers, however, were not so handsome as was expected.

Salvia tricolor.—A pretty slender subshrubby greenhouse plant, with small ovate leaves and long spikes of white flowers, having the upper lip faintly tipped with light purple and the lower half or apex of the lower lip bright rose color. Mexico.

Saxifraga purpurea.—A beautiful hardy perennial, with large broad, rounded obovate leaves, and scapes six or eight inches high, supporting a dense branched subcorymbose panicle of drooping flowers of a deep red purple. Sikkim Himalaya.

Senecio Mikaniae.—A fast-growing greenhouse climber, with light green smooth fleshy ivy-like leaves, and axillary corymbs of yellow sweet-scented flowers, seldom produced. It is a very useful summer plant for various purposes in the flower garden. Also known as *Delairea odorata*.

Solanum capsicastrum.—A pretty greenhouse dwarf sub-shrub with small oblong lanceolate leaves and small flowers, succeeded by globular vermilion colored berries, which are extremely ornamental. Brazil.

Statice Bondwellii.—A neat half hardy biennial, with spreading sinuated leaves and branching flower stems bearing yellow flowers. Algiers.

Thunbergia Natalensis.—A fine greenhouse evergreen subshrub, with opposite ovate acute sessile largish leaves, and stalked axillary horizontally-placed flowers, which are large and showy, with the curved tube yellow and the spreading limb of a pale blue. Natal.

Torreya grandis.—A noble evergreen tree, perfectly hardy. It has some resemblance to *Cephalotaxus*. Mountains of Northern China.

Tritoma uvaria.—A stately and brilliant herbaceous plant.

Tropaeolum majus, var. *nanum*.—A remarkably dwarf and compact variety, not running, and bearing a profusion of bright scarlet flowers. It will form a very handsome summer plant for beds or pots or vases. A garden variety.

Veronica decussata, var. *azurea*.—A hybrid raised between *decussata* and *speciosa*, much resembling the former, but the color of the flowers different. A garden variety.



DE TONGRES PEAR

of the size of a walnut. 120 Waterbury N.Y.

The New Edition of Downing's Landscape Gardening.



THE American public is greatly indebted to Henry Winthrop Sargent, Esq., for this new (the sixth) edition of the "Theory and Practice of Landscape Gardening;" it could not have been committed to abler hands. The additions consist of a supplement by Mr. Sargent, bringing the work up to the day, both on the best methods of making a country place, and an excellent account of the newer deciduous and evergreen plants lately introduced, both hardy and half-hardy.

This is done with a perfect understanding of the whole matter, and with an earnestness of purpose that will give universal satisfaction. Two styles of country places, he says, are attempted in this country: viz., a place



FIG. 92.—SCAMPSTON WEEPING ELM, at Wodenethe
Age, 6 yrs. Height, 7 ft. Circum., 36 ft.

without any trees, or a dense wood; in the first, the effects are to be produced by planting; in the second, mostly by the axe. Taking the two places he is best acquainted with,—Mr. H. H. Hunnewell's, near Boston, and his own on the North River,—as examples of the two modes, he illustrates the results, giving a decided preference to the first. He introduces us by superb steel engravings, to Mr. Hunnewell's beautiful mansion and grounds;



FIG. 94.—THE SCALED JUNIPER, at Woodlawn, Residence of R. S. Field, Esq., near Princeton, N. J.
Height, 44 feet. Circumference, 29 feet.

in his own case to a fine picture of his own dwelling, and wood cuts of the grounds; we should have been glad to see the steel employed here also, but as the publisher has put little or no advance on the price of the volume, such a course would have been an unwarrantable expense. These steel plates are most admirably executed from ambrotypes, they are as admirable as the places themselves are each beautiful. Other illustrations of new ornamental trees are given; as a specimen we insert the foregoing.

These must be acknowledged to be surpassingly beautiful; and there are others of equal merit, drawn by the publisher himself, who holds a pencil rarely excelled in its ability to give the character of foliage.

At the risk of trespassing, we are anxious to present the two plates, figs. 35 and 36, exhibiting two lovely specimens in which we take especial interest.

Mr. Sargent's judicious method of planting, is to employ a quantity of stakes or poles, ten or twelve feet high, and by placing first a stake where he thinks a tree should be planted, and then several smaller stakes at such a distance around it as the proposed tree will extend to when fully grown. By carefully observing this collection of stakes from his point of view, which as a general rule should be the principal room of the house, the planter will at once see whether it is in the right place, whether it is too near the road or walk, or will injure a view. When satisfied by many

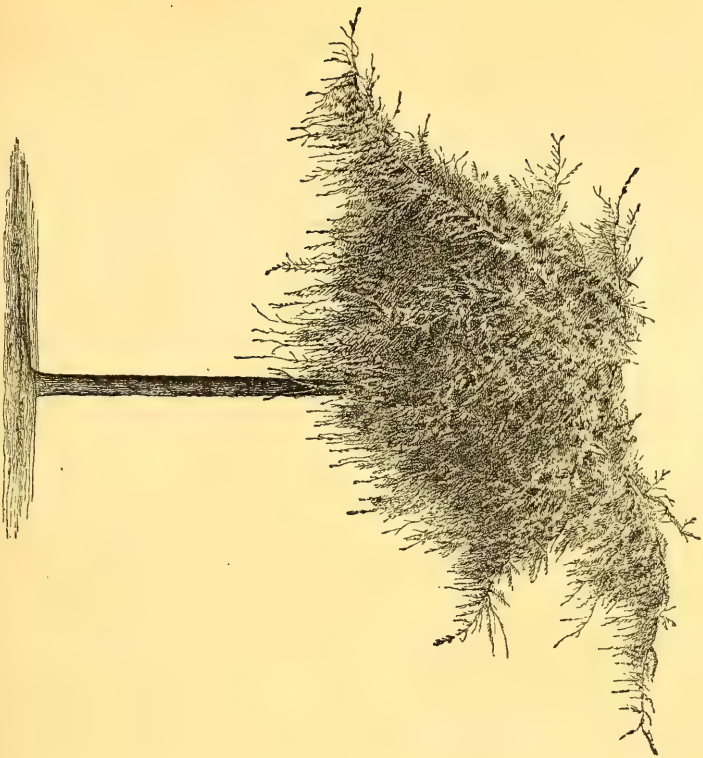


FIG. 35.—**WEeping LARCH**, at Wodeneth. Age, 8 yrs. Height, 12 ft. Cir., 35 ft.



FIG. 36.—**LARGE-LEAVED MAGNOLIA**, at Laurel Hill Cemetery. Age, 10 yrs. Ht., 39 ft.

A. J. MOORE DEL.

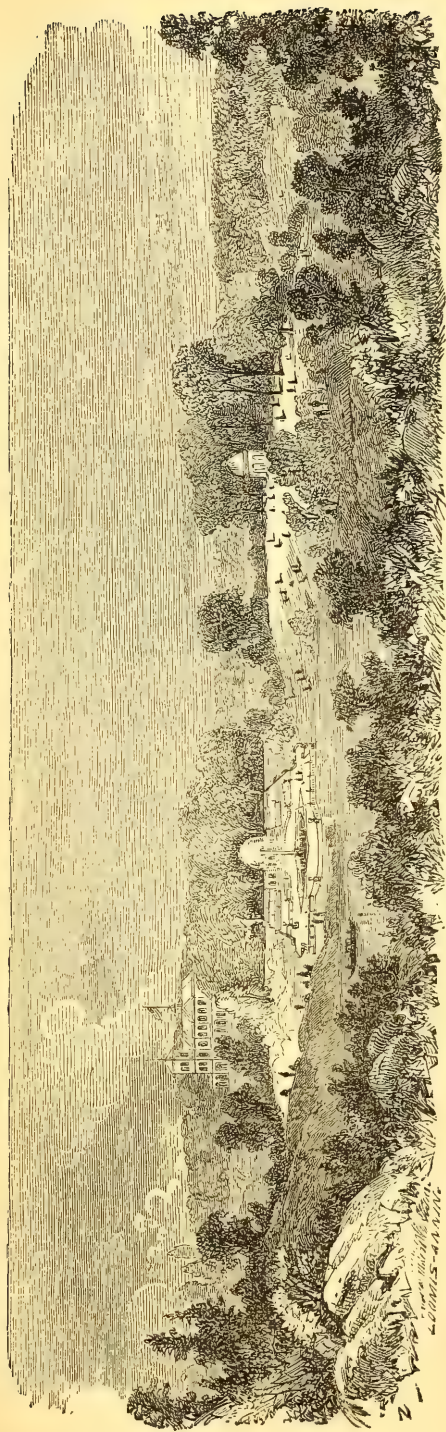


FIG. 103.—View of Water Terrace in Central Park.

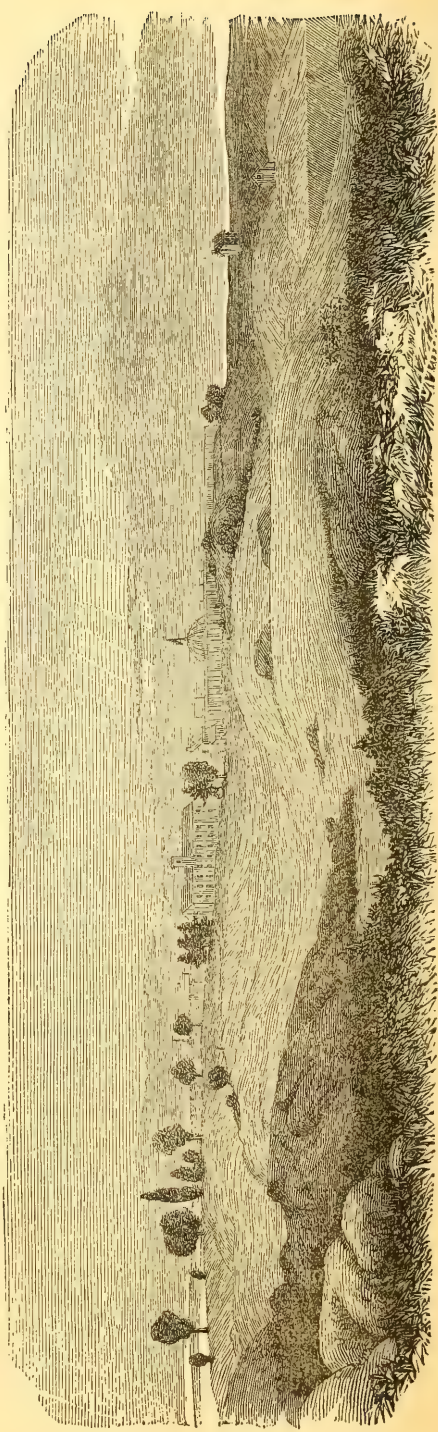


FIG. 104.—The original condition of the ground.

observations—and it will be well if made from many points of view, all, however, subservient to the principal point—that the centre stake is correctly placed, let him substitute for it a small stake eight or ten inches high, with the name of the tree to be planted there legibly written upon it. In the autumn or spring, let the hole be dug at leisure, properly and carefully prepared, and let a tree be selected from the border nursery (previously stocked for the purpose,) on a damp or rainy day, and as properly and carefully planted. Pursue this course with all the single trees, groups and masses, and if judiciously done the most complete satisfaction will be the result; because one may not only make up his own mind by studying these groups of poles, for weeks or months, even, but he can also have the advantage of criticisms from intelligent visitors; and if the poles are wrong it is much easier to remove them than the trees.

This is practical advice, but it is accompanied by the remark that it would be no more fair for a person new to planting, to be expected to make a fine picture in this way, than it would for a farmer to go to town and make a lawyer, a doctor or a merchant of himself, without study. You must employ a landscape gardener, of course.

The foregoing is a sample of the practical character of the "Supplement," which is full of valuable hints and carefully digested observations, drawn from extended experience in laying out and adorning an enchanting and almost fairy scene.

Of the value of the notes on trees and shrubs we may speak hereafter; suffice it now to say, that the learner will here find a guide that will make the work indispensable as a manual.

The historical notices, of which there are two too brief chapters, are capital; we are told much in few words, but those words have each a meaning.

The New York Park, and Llewellyn Park, at Orange, N. J., receive notices which will add much to the reader's appreciation of their merits; there are several engravings of each; from these we select, to show their quality, two views of Central Park,—one exhibiting the original condition of the ground, and the other the contrast of what it is to be.

On the subject of acclimation of plants there are a few observations that embrace the whole topic in a nutshell, which we shall present in these pages hereafter.

We agree with Mr. Sargent when he says: "Take it all in all, we consider the Mahonia, sometimes called Berberis Mahonia, the most valuable of all shrubs, deciduous or evergreen," and we add that the Mahonia Japonica has proved this winter to be hardy, affording a long-sought desideratum among us, a broad-leaved evergreen shrub.



STRICTURES ON ERRORS AND WANT OF METHOD PREVALENT IN POMOLOGICAL WRITINGS.

I TAKE the liberty to offer through the medium of the *Horticulturist*, a few words of criticism upon the want of unity of language and idea, and upon what I conceive to be the misemployment of terms on the part of pomological writers, as shown by them, especially in their descriptions, *pro forma*, of the distinguishing characteristics of fruits. In venturing upon those strictures I am encouraged by the hope that they may lead to the employment in those descriptions, as far as may be practicable, of a universal language; that it may not be considered a matter of indifference with writers to preserve in them *an identity of idea*, with themselves, at least, if not with others; and that terms evidently improper may give place to such as are evidently correct.

In referring to the works of the popular pomologists of the day, it will be seen that, both in idea and language, they differ alike with each other and with themselves. Thus, in the late enlarged edition of Downing's work, under the supervision of his brother, Charles Downing, the *dominant* idea of the editor is, that the *saccharine*, or *acid*, or *vinous* characteristic of a fruit *constitutes its flavor*; while in the "Fruit Culturist" of Thomas, by the word flavor is meant (generally) the property communicated to a fruit by the presence of an *aromatic*. Each of these writers, however, occasionally transgresses his own idea and adopts that of the other. The following and similar expressions employed in descriptions introduced into the former work occur so frequently as to show that my understanding of its editor's idea is correct.

"Sugar and acid both abound, but so nearly balanced that without prevalence of either, an excellent rich flavor results."

— "with a rich vinous flavor."

— "with a sweet and rich flavor."

— "with a very rich brisk sugary flavor."

— "with a sugary, vinous flavor," &c., &c.

But in the quotations which follow, he disregards his governing rule, and shows that the tangible or solid properties of a fruit instead of constituting the flavor, are dependent for it upon the presence of an aromatic. Thus—

"Flesh very saccharine and rich, with a slightly musky flavor."

— "a pleasant juicy fruit, with a musky flavor."

— "buttery, juicy, melting, with a rich aromatic perfumed flavor."

— "exceedingly sugary and rich, with a highly perfumed aromatic flavor."

— "very sugary, with a decided flavor of almonds."

Here, then, we have two opposite ideas of what flavor is, both of which cannot be correct;—one *material*, as "sugary," "vinous," "acid;" the other *essential*, as "musky," "aromatic," "perfumed."

In the first examples given, it is the flavor and not the flesh which is "sugary;" in the others, it is the flesh and not the flavor. As this word *flavor* is defined to be "the *rarified essence* of bodies which affect the organ of taste,"—something independent of the substance to which it is added,—the latter examples are evidently correct, while the former are not. Thus

we have in confectionery the popular article of lemon drops. Here, neither the sugar nor the acid, which communicate the sensations of sweet and sour, but the essential extract of lemon, constitutes the flavor. A substance may have a sweet or sour *taste*, but a sweet or sour flavor is a perversion of language. As well might we say of the style of a building, it is a wooden or brick style, because wood or brick predominates in the materials of which it is composed.

But what is exceptional with Mr. Downing seems rather to be the rule with Mr. Thomas, of which the following quotations are believed to afford a fair sample.

“Flesh melting, juicy, rich, sweet, perfumed, with a first rate flavor.”

—— “buttery and melting, with a fine rich aromatic flavor.”

—— “juicy, melting, sweet, with a very high perfumed flavor.”

—— “melting, juicy, sub-acid, with a good second rate flavor.”

It will be seen that what is here set down as sweet, and sub-acid, is considered to be distinct from what is characterized as flavor, and that they are not used as terms to qualify it. He sometimes repudiates his rule, however, as instances of which transgression I simply quote the following :

“Flesh very juicy, melting, buttery, with a rich sub-acid, or vinous flavor.”

—— “with a very rich, sweet, and excellent flavor.”

Such examples with him, however, are rare. He evidently knows the right, but yet (occasionally) the wrong pursues.

With a consciousness, I suspect, of this want of uniformity of description in others, and with an apparent purpose to avoid it, the Boston notion seems to be to divide the internal characteristics into two heads, viz. : flesh and flavor,—Mr. Hovey’s formula quite uniformly running in this wise :—“Flesh white, fine, melting, and very juicy ; flavor rich, sugary, vinous, and perfumed.” So far as this form is marked by order and system, it is worthy of all acceptance ; but as the idea of what constitutes flavor seems to be a compound of those entertained severally by Mr. Downing and Mr. Thomas, it can claim no farther advantage over theirs, except in being a consistent mingling of truth and error, forced upon him of necessity in order to maintain his separate heads.

Mr. Elliott, of the *Fruit Growers’ Guide*, while equally consistent, and not less systematic, is more comprehensive and concise, embracing under one term all the properties of a fruit, thus : “flesh white, melting, juicy, rich, perfumed.” He exhibits in his work a pains-taking carefulness and method, and seems not to have gathered up and published descriptions as dissimilar as their origins are various, without having duly digested his materials, and assimilated them to a definite idea of his own. He cautiously avoids the confusion of the others, and evidently rejects, as absurd, the idea that a sweet or an acid is a flavor. But while he is careful to shun this error, he falls into that other, common to all pomological writers whose descriptions I have met with,—the obnoxious and intolerable perversion of the words *perfume* and *perfumed*, as applied to things that we eat.

In all definitions of *perfume* it is represented as affecting only the organ of smell ; “volatile particles emitted from sweet-smelling substances ;” “a sweet scent ;” “a wide-spreading smell.” Yet pomological writers with one accord seem to take a strange delight in debauching the integrity of its signification by using it as descriptive of an effect pro-

duced upon the *palate*, and making it in this connection interchangeable with aromatic, a term characterizing substances submitted to both senses, smell and taste. To describe the aroma, or *aromatic flavor* of a fruit as a perfumed,—that is to say its flesh is perfumed,—as though it were made to smell of and not to eat, falls but little short of being not absurd, merely, but ridiculously so.

While these writers, with one exception, err in their idea of what constitutes flavor,—Mr. Downing very generally, Mr. Thomas occasionally, and Mr. Hovey always,—and while *all* of them, more or less frequently, agree in calling that a perfume which is subjected only to the judgment of the palate, they also afford examples, more or less rarely, in which the proper mode of description and just employment of terms are recognized. I do not therefore anticipate from them objections to a general adoption of those words and forms which thus have the sanction of their authority; but I rely, on the contrary, upon their cordial coöperation in the summary rejection of those careless methods which tend directly to confusion and error, and in the establishment, in their stead, of system, order, and uniformity, whereby such exactness in the use of language shall become so general among pomologists that words in truth represent things, and misconception of their import be rendered impossible.

The possibility of erroneous information being conveyed by the want of a common understanding of what constitutes flavor, may be easily conceived. Mr. Downing, for instance, with his idea that where "sugar and acid both abound" in due proportion, "an excellent rich flavor results," may say of a fruit rivalling the Seckel in its exquisite aroma, that "*it has not a high flavor.*" Mr. Thomas, on the other hand, with a true appreciation of the term, may say of the same fruit, "*we know of no pear that has a more delicious flavor,*" (i. e., aromatic, or musky, like the Seckel); but, forgetful for the moment that Mr. Downing's idea differs from his own, he may add in perfect sincerity the disparaging words, "Charles Downing says it has not a high flavor," (i. e., is not exceedingly sweet, sugary); "hence we infer that it is variable, and if so, its value must be greatly lessened by this characteristic." This example, indeed, is not imaginary; the language is quoted from the descriptions of the two writers of the pear Des Nonnes. A fruit of unsurpassed excellence, which an observation of seven successive years, by the writer, has shown to be remarkably constant, never within that period having proved to be "variable," is thus qualified into virtual condemnation because of the absence of a uniform understanding of the significance of the one word, flavor, in the minds of the writers. Is not one instance of this kind argument enough in favor of the inauguration of a reform? And does not the great and constantly increasing interest in pomology demand it?

It will be observed from what has been written, that the formula of Mr. Elliott is considered the least objectionable. Indeed, by substituting *aromatic* for *perfumed*, and *aroma* for *perfume*, whenever those words occur, it would be a model of simple, uniform, condensed description, enumerating with rigid brevity and scientific exactness, all the characteristics which the specimen under examination may possess, and ignoring utterly the slatternly manner, the tautological and nonsensical forms and expressions which disfigure the descriptions of other writers in books and magazines. Where the flavor will admit of a specific term to characterize it, as berga-

mot, musky, (or Seckel), lemon, pineapple, almond, let it by all means be employed. But where the qualities of the fruit are merely luscious, grateful, refreshing, of a high relish, from an abundance of sugary or acidulous juice, *flavor* has no part in them, and should be resolutely excluded from the description, how much soever the temptation may be to indulge in its employment.

New editions of the popular works on pomology will be constantly required to supply the demand themselves have created; and publications altogether new are yet to come. Whether their authors may agree with the writer or not, in the opinions here expressed, let us hope, at least, that in their future editions and forthcoming works, some standard of description may be adopted as their own, and adhered to; and that the rag-bag accumulations, tumbled together from all sorts of sources, undigested and incongruous, which disfigure in a greater or less degree all the pomological publications of the day, may be steadfastly and utterly abjured.

J. C. H.

Syracuse, January, 1859.

GRAPE CULTURE FOR WINE.

BY JOHN H. HEYSER, HAGERSTOWN, PENN.

"Hilkia, the priest, found a book of the law of the Lord, given by Moses."

HAVING read part of a very interesting address by David Thomas in the February number of the *Horticulturist*, in which he confesses himself puzzled about some things concerning the culture of grapes, and not remembering to have seen certain ideas advanced by any one, I have been persuaded to make the attempt to give my mite. There are some who believe in a constant progressive development, others in cycles, and really it would seem that this last idea will be sustained in reference to grape culture in this country. We have gentlemen of wealth and intelligence who have spent many years and much money trying to make foreign grapes grow here, and have books teaching us how to stump in our vines. If we look at our vineyards at a little distance, they remind us of a field of running beans. Some time last autumn Mr. Miller, of Calmdale, (who I believe does his own thinking,) came to the conclusion that all this was wrong, and went at correcting it. Instead of giving my ideas on the subject, I wish to introduce (if not too long) an anonymous article on grape culture, which I found in an old book printed at Georgetown, D. C., in 1818, called the *American Gardener*:—except that I would wish to say, that the reason why I think we have gone astray is, that our vineyards and gardens have been mostly managed by foreigners from the north of Europe, where the climate is damp, and sun is scarce, and where it is necessary to adopt means suitable to those conditions, but entirely wrong for this country, where we have tropical suns that parboil the fruit.

"Before this little volume is sent into the world, the Editor thinks it a duty to say a few words upon the very important subject of Vineyard planting, than which there cannot be imagined a national object of greater magnitude, or of consequences more desirable. In a commercial view we have only to advert to the vast quantity of wine imported from foreign

countries (to the amount of three millions of dollars a year,) to be convinced of the advantages that must result from adoption, upon system, of an extensive cultivation of the grape. The question is, how can this object be attained? True, it has been inferred that the soil and climate of our country must be suitable to the vine, because the whole face of the country is thickly bespread with that plant in a wild state; and because some persons of curiosity and enterprise have succeeded in cultivating them—nay, a few in making wine. But why has not the cultivation been more successful? Why not more universal? A few public-spirited gentlemen have taken considerable pains to introduce, from the best wine countries in Europe, various kinds of grapes of the best qualities in that quarter of the world; why has no greater progress then been made in this so very desirable a branch of agriculture? Why have we no wine brought to market? To all this our answer is, '*For that very reason.*'

"Meantime, we exhort every man who has a farm to appropriate a certain portion of it to the making of experiments, and to the propagation of the native plants. The difference between the European culture of the grape, practiced by foreigners, and that which succeeds in the United States, is this: In the latter the vines must be trained as *far from the ground as they can be conveniently elevated*. The vines must not be cut off beyond the bunches of fruit, and the grapes must hang as much as possible in the shade of their own leaves: whereas foreigners generally train their vines near the ground, that they may have the advantage of the warmth of the earth, as well as of the sun. They also take off the leaves; the consequence of which in this country is, that the sun scorches the skin of the grapes, after which they will not ripen. . . . In cultivating our native grape, rub off *all the buds* with your finger, except such as you wish to bear grapes the next year. Those buds that are left must be trained so as to grow as vigorous as possible, i. e., by training them *nearly horizontally, with a small rise*. Those branches that have the grapes on must not be cut or pinched off beyond the bunches of grapes, but must be permitted to run at large."

This was written in 1818. How much have we learned since? Nothing! Mr. Miller, whilst on a visit here last Autumn, saw vines that were not stumped in, that have borne for four years piles of grapes, and that had good wood for another pile.

"And it came to pass when the king had heard the words of the law, that he rent his clothes."

REMARKS ON THE DAHLIA, HISTORICAL AND CULTURAL.

BY A YOUNG FLORIST.

THE Dahlia is a native of Mexico, and was discovered by Humboldt, growing in sandy soils, between four and five thousand feet above the level of the sea. It was first introduced into Europe from that country, and one variety flowered in 1789, under the care of that eminent botanist Cavanilles, Professor and Director of the Botanic Garden at Madrid, where he soon after flowered two others, figured and described in his *Scenes*. The first plant was received in England by the Marchioness of Bute, which appears to have been soon lost; and this species of Dahlia was unknown in Eng-

land until it was reintroduced in 1804, by Lady Holland, who brought seeds of it in that year from Madrid. The name of Dahlia was given to this flower by Cavanilles, of Madrid, in 1789, in honor of Professor Dahl, a Swedish botanist. This name was afterwards changed by Wildenow to Georgina, in honor of a German botanist, who resided many years in St. Petersburg, in consequence of the genus *dalea* having been previously established by Thunberg. As, however, the name is neither spelled nor pronounced the same as Dahlia, and as the name of Dahlia was given long before that of Georgina, the plant is now restored to its original appellation.

During the first few years of their introduction into Europe, few varieties were originated, and those of very inferior merit. We find this circumstance to have been noticed in the most scientifically-managed gardens of France and Germany, as well as in the Madrid garden, where they were first introduced. De Cándolle, in his memoir, published in 1810,—that is, eight years after their introduction into the Jardin des Plantes,—describes only eight varieties, and from what can be deduced from that paper, it appears that he had not, up to that period, produced a double flower, although he evidently expected such a result. In the Berlin garden, long noted for the success of its cultivation, and into which the Dahlia had been received as early as 1800, no new varieties were obtained from seeds till six years afterwards.

The Dahlia is readily increased by seeds, cuttings, dividing the roots, and grafting: by seeds, only with the view of obtaining new and better varieties; by cuttings, to perpetuate good varieties already obtained in the greatest numbers, and also to have small roots or tubers convenient for exportation; by dividing the root to increase known sorts to a limited extent; and by grafting, to obtain plants with large roots more rapidly than the other methods. This last method is but seldom adopted. When seeds are procured, they should be carefully dried and preserved during winter, and sown in March or April in seed-pans or pots, in a hotbed or other temperature of about fifty-five or sixty-five degrees. If the plants come up quickly, it will be well to transplant them into single pots of the small sixty size, one plant in each pot, and keep them in a temperature of from forty-eight to fifty-five degrees, till the first week in May, when they may be planted out in a border of rich, deep, mellow, good soil. They will require particular attention against late spring frosts till towards the 20th of this month; afterwards their only culture is to stake them as they grow up, and select the most favorable-looking flowers as they appear, throwing away those that are single, or of inferior merit. The best and by far the most general mode of propagating Dahlias is by cuttings, and in order to obtain these, the old roots are put into a state of growth early in the season, and the young shoots which spring from them, and which are produced in abundance, are employed as cuttings. Some extensive growers excite their Dahlia roots as early as December or January, and continue taking cuttings off them as long as they continue to afford them, or until a sufficient number of plants of the desired kind is obtained. For ordinary purposes, the beginning of March is a good time to put the rest into a situation to grow, which is usually done, when on a small scale, by putting them in light mould in larger pots, placing them in a hotbed, frame, vinery, plant-stove, or in any other convenient place where there is a temperature

of about sixty or sixty-five degrees, or even more. Upon a larger scale, the old roots are placed together, without potting, upon a hotbed, shaking in a little light, sandy mould, or rotten tanner's-bark, amongst them. In either case the young shoots soon begin to appear, and should then, as well as before, be occasionally sprinkled with water. When the shoots are from two to three inches in length, they may be cut off close to the old tuber, but not so as to injure its top or crown, because many more shoots will arise from it if required. The cuttings are prepared by cutting the shoot smoothly across under the first joint, and without shortening the leaves, planting it in the smallest-sized pots (thirties) into a light soil, chiefly composed of decayed leaves and sand, or, as many practice with success, in pure white sand alone. The sand should be well wetted, and the cutting inserted just as far as will enable it to stand upright, for with most other cuttings, the shallower they are planted the better. When the cuttings are so planted, they should be plunged into a brisk bottom-heat, covered with a hand-glass, and regularly shaded; whilst in this situation they should be regularly watered, but not over the leaves, and kept close shut up, unless to inspect the plant. In ten or twelve days they will have sufficiently rooted to be taken from under the glasses, and should be accustomed to the air by degrees; when they will stand without flagging or drooping their leaves, they may then be transplanted into larger pots, and into richer mould, the sand being previously shaken from them. They must now be accustomed to a lower temperature, and progressively hardened, by removing them from the propagating pit or house to other situations, unless they will stand the air and temperature of a close frame or cold pit; but in these they will require to be covered at night with mats till May or June, when they must be accustomed to stand the open air, so that they may be planted out where they are to flower by the middle of the month. Sometimes Dahlia plants are forward enough by the first of May to be planted out; but as it would be unsafe to expose them too early in the season, it would be well, if planted too early, to cover them with hand-glasses for a week or two, or in want of those with pots, which being left off during the day, and put on during the night, is the best substitute for the former. Cuttings are also taken off the plants during the growth, any time from June to September. The shoots best calculated for this sort of propagation are those small lateral branches, which in general abound upon the plants, that may be successfully struck by being planted in sand in small pots, and placed behind a wall or other shaded situation, and otherwise treated as above.

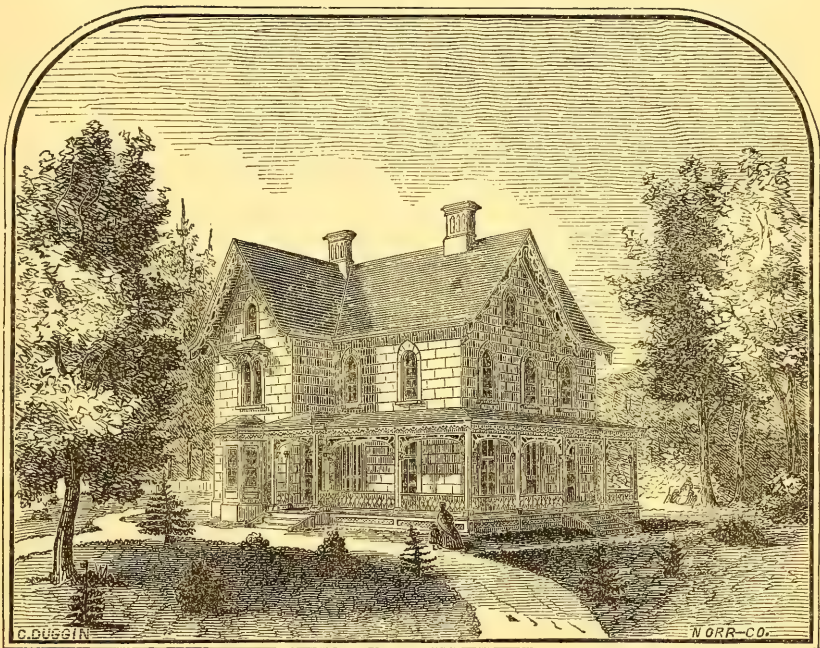
The process of multiplying by dividing the root is simple, and requires nothing beyond the careful separation of the tubers, each piece having a portion of the crown of the root attached to it, in which there are two or more eyes or buds, without which they would not grow.

The process of increasing by grafting is applicable not only to Dahlias, but to most strong-growing herbaceous plants having solid stems and large tuberous roots.

HOW TO BUILD YOUR COUNTRY HOUSES.

BY CHARLES DUGGIN, ARCHITECT, NEW YORK.

IN presenting to the readers of the *Horticulturist* a series of articles on, and designs of, country houses, embellishments, etc., I do not purpose giving an elaborate treatise on rural architecture, but simply a series of designs and plans, accompanied with such description of construction as may be necessary to convey a proper idea of the materials used, and the mode adopted of building the same together. In the present number I beg to offer the design of



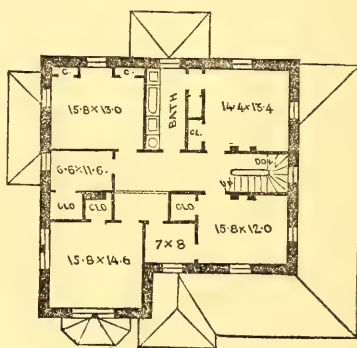
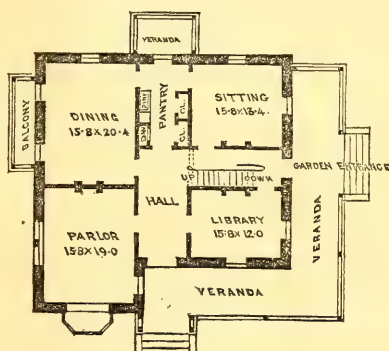
A CONCRETE HOUSE,

just completed in Essex county, New Jersey. It is situated in a beautiful and picturesque district, on the road leading from Orange to Milburn.

On reference to the plan, it will be observed that it approaches somewhat a square house. The parlor, however, is extended out sufficiently to afford a suitable termination for the veranda. The exterior is so treated as to present an entirely different appearance on each side.

The Arrangement.—Entering the house on the west front, you pass into a hall eight feet by nineteen feet. On the north side is situated the parlor and dining-room. The parlor, fifteen feet eight inches by nineteen feet six inches, with a bay window at the west end, commands a view of the high road and the western range of the Orange mountains; and on the south

side is a window leading unto the veranda. The dining-room, fifteen feet eight inches by twenty feet four inches, has, on the north side, two windows leading unto a roofed balcony. This balcony makes a pleasant sitting-place as well as an ornamental feature to the north side of the house, which would otherwise have a somewhat plain appearance. On the opposite side to these windows are two doors, the space between making a convenient place for the sideboard. The pantry adjoins the dining-room, and is fitted up with dumb-waiter, sink, supplied with hot and cold water, and ample drawers and closet room. This pantry is lighted by a window leading into a small veranda, serving as a covering to the outside steps to basement. The door from the pantry into the hall should be a sliding sash-door, glazed with figured or stained glass. By this arrangement the door will be less in the way, and in the summer season can be left open so as to get a pleasant breeze through the hall. On the south side of the house are the sitting-room and library, with a side hall between, in which the staircase is



placed, the sitting-room is fifteen feet eight inches by thirteen feet four inches, with one window on the south side, leading unto the veranda. On this south side is located the side entrance, coming convenient to the library (fifteen feet eight inches by twelve feet) which, in the present case, is purposed to be used by the owner as a room in which his business connected with his farm can be transacted. In this side hall, and under the stairs to the second story, are those leading to the basement, which is light and airy; the grade being in a slope towards the east, allows those rooms most used to be more out of the ground. The kitchen is placed beneath the dining-room, and is a large, well-lighted room; the fireplace is fitted with a range; on one side is a brick oven, and on the other a door leading to a commodious kitchen store, well provided with shelving.

At the back of the kitchen-range is a hot-air chamber, connected with a register in the dining-room. This arrangement is a very good and convenient one, and is more especially useful at those seasons of the year when it is not required to light the furnace, as the fire that is necessary in the range to prepare the meals will give sufficient heat to warm the dining-room, and it will further give the benefit of always having one warm room in the house, without the necessity of building a fire for the express purpose.

The space occupied in the first story by the pantry, is here devoted to a passage-way to the outside steps, and fitted up on each side with shelved closets. The dumb-waiter, for hoisting dishes, is also placed here, with an opening into the kitchen. The laundry or washroom is the same size as the sitting-room overhead, and is fitted up with wash-trays and closet-room. The remainder of the basement is devoted to milk-room, larder, and store-room. The coal-cellar being built under the front veranda, with a coal skute for the convenient storing of the coal.

The arrangement and sizes of the rooms on the second story can be seen by reference to the plan. The two chambers having no fireplaces are provided with iron stove-pipe rings built into the partitions and carried to the flues, so that in case of sickness, or its being necessary to have a fire in either of these rooms, a stove may be fitted up. In the bath-room is provided a water-closet, hip-bath and wash-basin, as well as the bath-tub, all arranged on one side of the room, and directly over the plumbing below. The tank being placed in the third story over this, brings all the plumbing very convenient.

The third story has four large chambers of the same size as the rooms on the first story. They are four feet high on the walls, and rise with the slope of the roof to eight feet six inches in the centre. All these rooms are well lighted and provided with closets. The space occupied by the bath-room below is devoted to a store-room, in which is placed the tank, as before stated.

The height of the basement is eight feet ; the first story, eleven feet ; the second story, nine feet ; and the third story, as before described.

Construction and Finish.—The mode of building all the external walls of this house, and the principal partition walls of the basement, is one that I think only requires to be known to be more generally adopted. The walls are built up of concrete, which is formed and laid up in the following manner :

Having marked out the line of your walls, place up some rough boards, forming a trough, the width of which should be the proposed thickness of your walls, which may be sixteen inches in the basement, and fourteen inches for the other stories. The trough or box should be about one foot deep, so that the workmen can reach the bottom. Then take stones, varying from three inches and smaller to say six inches cube. The stones forming the foundations may be larger, but it is not advisable in the upper walls to have larger stones, as the smaller the stones the better they bind; indeed some parties recommend breaking the stones up the same as for a macadamized road, but this is not necessary or advisable. These rough stones are built up in this trough with cement, lime and sand, made up in the following proportions. Take four measures of sand and one of cement—mix these together with water that has had lime added to it sufficient to make a whitewash. The sand should be sharp coarse sand, free from earthy matter; if the sand be fine, it is necessary to add a greater proportion of cement. This mortar is then thrown into the trough and the stones laid up with it, taking care to let the stones have as good a bed as possible, and to well bind together. The mortar should be used wet, and when fresh-mixed.

The windows and openings should have stone sills, and to the window-frames secure rough boards so as to make the box a trough complete for building up the walls. When you have filled the trough leave it to get properly set, and then shift your boards higher and continue the wall. Over

the doors and windows it is advisable to have the arches formed in brick and cement, although in the present case, the concrete wall is only used ; but the mason who did the work, having put up several houses of the same construction, knew better how to construct these arches in concrete than those who have not had experience in this mode of building.

The advantage of this style over the ordinary mode of building a stone wall is, its cheapness, dryness, and strength. It is less costly on account of the facility with which the work is done, there being no trouble in facing up the wall on two sides, and cutting the quoins or corner stones for the angles and openings. It is perfectly impervious to the weather, being built solid in cement, and its strength is indisputable, as can be proved by reference to houses built.

After the wall has been built up, it is necessary to cement it over on the outside so as to fill up all unevenness. Where projections are required, such as the architraves and arches to the windows, as in this design, they can be formed in cement ; and to break up the plainness of the surface, it can be marked off into blocks, as shown in the illustration.

The wall being impervious to moisture enables you to dispense with inside furring and lathing, and one coat of plastering, thus making another item of reduction in cost ; it being only necessary to put on the brown coat of plastering and then the hard finish.

In the house under consideration all the inside partitions above the basement are stud partitions. The rooms on the first story have moulded cornices. The general finish of the interior is of a simple character. All the woodwork throughout is of white pine—that to the first story is oiled and varnished instead of painted ; this plan is not quite so cheap as painting, on account of its being necessary to be more careful in the selection of the material and in the workmanship, but it has the advantage of showing the natural grain of the wood, and as time wears on it increases in richness of appearance.

The amount of finish to the exterior is readily understood by reference to the illustration ; it is therefore needless to go into details.

Cost.—The Carpenters' work to this house was contracted out for \$3,550. This included the slating and finishing, and all the painting. The outside cement having three coats, the same as remainder of work. The entire cost of the Mason work was \$2,700, which included the carting the stone to the building (nothing having to be paid for the stone, it being gathered from the farm), and the necessary cisterns, cesspools, and drains. The total cost therefore of the carpenter and mason work was \$6,250. The house being equal to 64,500 cubic feet, brings the cost of this house to about 9½ cents per foot for every cubic foot of space it occupies. For explanation of this mode of calculating the cost of a house, see page 504 of last volume. In addition to the above outlay has to be added the cost of the furnace, mantles, grates and plumbing.



DE TONGRES PEAR.*

THIS fine fruit originated in or about the very old city of Tongres, in Belgium, and was first described in the *Album de Pomologie*, Vol. 3, 1849-50.

Fruit large, pyriform, or obovate-elongated, depressed or curved towards the stem. Color dull green, with large russety waves or spots, turning to a gold or brown yellow towards maturity; with a dull red cheek, and an uneven and rough appearance. Flesh white, melting, with sufficient sugar and aroma and a vinous sub-acid taste; best. It is one of the few foreign pears which have retained their original qualities in this country. Reports from Kentucky state it to be as "ranking among our best." At Charles Downing, Esq.'s, where it fruited in 1858, it proved to be a very fine fruit also. So that there can be little doubt as to its adaptation to at least our Middle States.

Tree vigorous enough, of a pyramidal form; bark brown-reddish; buds conical, prominent, sharp, with a stripe extending from the base of one bud to the next lower bud.

It has been already sent under false names; the Vicomte de Spaëlberg was received for it, and is somewhat extensively diffused in the place of the genuine variety; but the longitudinal, prominent stripe extending from one bud to the other, is a peculiar character by which this variety can easily be distinguished from spurious varieties. The fruit ripens in Belgium about the middle of October, but here it is about three weeks earlier, and more than a month earlier farther South.

L. E. BERCKMANS.

THE PINNEO AND HEBRON PEARS.

BY GURDON W. RUSSEL, M.D., HARTFORD, CONN.

I SEND YOU the outlines, with descriptions, of two varieties of valuable pears, the *Hebron* and the *Pinneo*, the latter unquestionably a native of Connecticut, and the former also, I think.

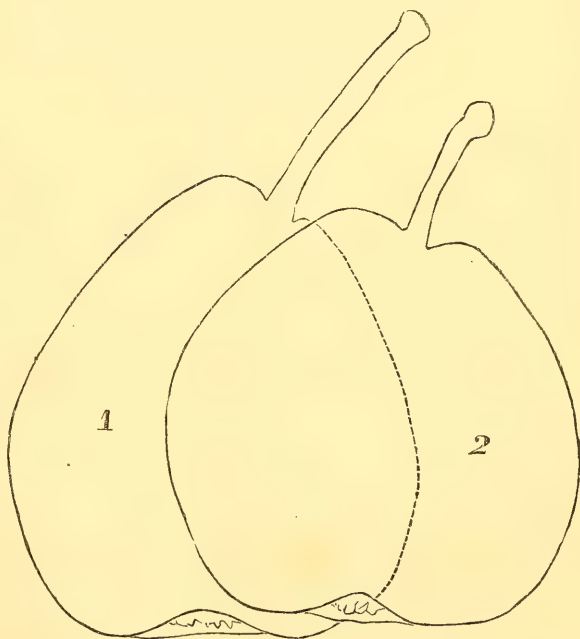
Hebron: This originated, as near as can now be ascertained, in the town of Hebron, in this State; when, I cannot learn; but it was introduced into this neighborhood many years since. Mr. Paphro Steel informs me that he obtained grafts of it from Mr. Normand Knox, about 1826, and Mr. Knox told him that he himself went to Hebron for them many years before. Mr. Samuel Kellogg, of East Hartford, tells me that he went to Hebron for grafts as many as forty years since, and that there is a tradition in the family that the pear was brought from Raynham, Mass., more than a hundred years since, by Rev. Elijah Lathrop, his grandfather. I cannot learn from Hebron that this was the case, and do not fully credit it, but intend to investigate further. It is thought to be a native, by our cultivators here, and it is stated in the *Homestead*, August 26, 1858, that the original tree stands, or did stand, a short time since, in the town of Hebron. From that paper I copy the following description:

"Fruit obovate, depressed, pyriform; skin thin, generally smooth, yellow (cinnamon) russet, thickly covered with obscure brown dots, especially

* See Frontispiece.

upon those parts least russeted ; stem three-fourths of an inch to an inch and a half long (curved), inserted somewhat obliquely in a moderate depression ; calyx nearly closed in a very shallow basin ; flesh (coarse) melting, juicy, sweet, and slightly musky, aromatic ; ripe July 20th to August 10th." It is a thrifty grower, a great bearer, and of " very good quality ;" like all summer pears it is necessary that it should be picked before ripe.

Pinneo : This is an old Connecticut variety, ripening about the first week in September, and although long known in the eastern part of the State, seems not to have been long recognized out of it. I became acquainted with it about sixteen years since, and the first printed account, as far as known, was in the *Albany Cultivator* for 1845, by John S. Yeomans, of Columbia, Conn. Mr. Yeomans in a recent communication to the *Home-stead*, states that the original tree is still living.



1. PINNEO.

2. HEBRON.

A friend writes me from Gilead, Sept. 17, 1857 : " Last evening I called on Deacon Hutchinson and obtained definite and reliable information (as I have no doubt) of the origin of the Pinneo pear. More than fifty years ago, Deacon H. said, he went to Columbia on purpose to get of Esquire Pinneo some pear sprouts for himself, etc.

At that time Esquire Pinneo told the Deacon that he was once mowing bushes on the out lot, and found a small pear tree, which he spared. In the proper time for setting out trees, he dug up the little bush, and set it out near his dwelling, thinking to have it grafted some day ; but he finally concluded to let it grow as it was, and see what fruit, if any, it would bear.

Well, it bore very good fruit, and he did not wished it changed. The sprouts also came up, and were in turn set out, and bore the same kind of pears. I do not know if Esquire Pinneo gave them a name, but as the sprouts were widely scattered, the fruit came by common assent to be called the Pinneo pears."

This is the name by which the pear is generally known in the eastern part of the State, where it is considerably disseminated.

I think sometimes it may have been called Summer Virgalieu. Once it has been sent to me under the name of Graves.

Fruit of medium size, obovate, skin yellow, with numerous russet dots, and patches of russet about the stem, which is long, curved, rather stout, and obliquely inserted in a small depression; calyx open in a shallow basin; flesh melting, juicy, and sweet, with slight astringency; seeds long, black, many abortive; quality "very good."

This is the pear which has been sent out within a few years by Messrs. Hovey, under the name of the Boston, which has been exhibited by them at the Exhibitions of the Massachusetts Horticultural Society as "a new native pear," and which has received premiums from the Society repeatedly. Trees were offered for sale, with extensive puffing, at five dollars each, and the general impression was, perhaps without any distinct assertion of their's, that it was a fruit of their own raising; it has been published as a fruit raised by Mr. Hovey, and no efforts were made to contradict it, nor am I aware that the source from whence it originated was ever named in print, or verbally; the origin seems studiously to have been concealed, and its introducer into a new locality appeared willing to receive the credit of its origin. Perhaps, commercially, he expected to turn a penny by it.

Now, Mr. Editor, I put it to you, and to every horticulturist, if this is not decidedly rich. Only think! here is a Connecticut fruit, cultivated for more than half a century, so long that through an extensive region the name is well established, which turns up in a distant locality, under a new name, is generally understood to be a new fruit, and is advertised with all the show of new fruits, large type, large price, and great excellence.

The identity was not discovered until a little more than a year ago, when specimens grown in Boston were compared with some grown in this State; there had been no previous suspicion of their identity, and as Mr. Hovey had not published a description, no one had been able to institute a comparison; for the trees which he had sent out had not yet come into bearing. The operation was a bold one, and probably a profitable one; if it is to be defended as a "fair business transaction" it is not to be defended upon its morality.

Nor can it receive the sanction of any nurseryman who entertains a love and respect for his business; of any amateur who expects truthfulness in his dealings with nurserymen; or of any society which expects its opinions and decisions to be respected. This matter, and others of a kindred character, may have troubled the Massachusetts Horticultural Society often enough before now, but the best endowed society in the Union cannot expect to maintain a character for justice and honesty, when such transactions as the above are allowed to pass without rebuke. The unfairness of the thing is so apparent that much more need not be said; this doubtless was the view taken of it by the American Pomological Society at its late session in New York, when, after a lengthy and excited debate, it, by a

decisive vote declared that this pear of which we have been writing should be called *Pinneo*, refusing even to tolerate *Boston* as a synonym; that was a pretty effectual rebuke, which somebody must have felt. I do not think that horticulturists will be satisfied with the attempted apology, that this is only one of the "tricks of trade;" I have no doubt but that the fraternity would indignantly deny it, as being contrary to those principles of common honesty which should govern all men in their transactions. Horticulture is now taking with them, as it is now taking with the people, an important and exalted position, and it becomes their horticultural societies, and private gentlemen also, to see that it receives nothing of detriment at their hands.

And now, Mr. Editor, I must beg your pardon, and the pardon of your readers also, for having obtruded upon them what may seem so much of a personal matter. But I have no feeling about it, except that of placing it in its true light; and as I first exposed the imposition upon the public in the *Homestead* of last year, have felt bound to see that a proper defence should be made against some statements and insinuations in the "magazine of horticulture" for November last. Our "Connecticut cultivators" do not pretend to know anything more than others in the same field, but they are smart enough to detect some of the impositions which are allowed to circulate, and having detected, to expose them.

If there is anything more ridiculous in this whole transaction than another, it is, that the *Pinneo* should be pronounced identical with the *Hebron*; they are very different as every one knows who is acquainted with them, and as any one will see who will read the descriptions—different in form, color, flavor, and time of ripening; and yet one is placed as the synonym of the other, by Mr. Hovey, and he refers to his own pages for evidence of this identity. They are not the same, have never been thought to be the same by any one here, or by any one elsewhere, who was familiar with both the fruits.

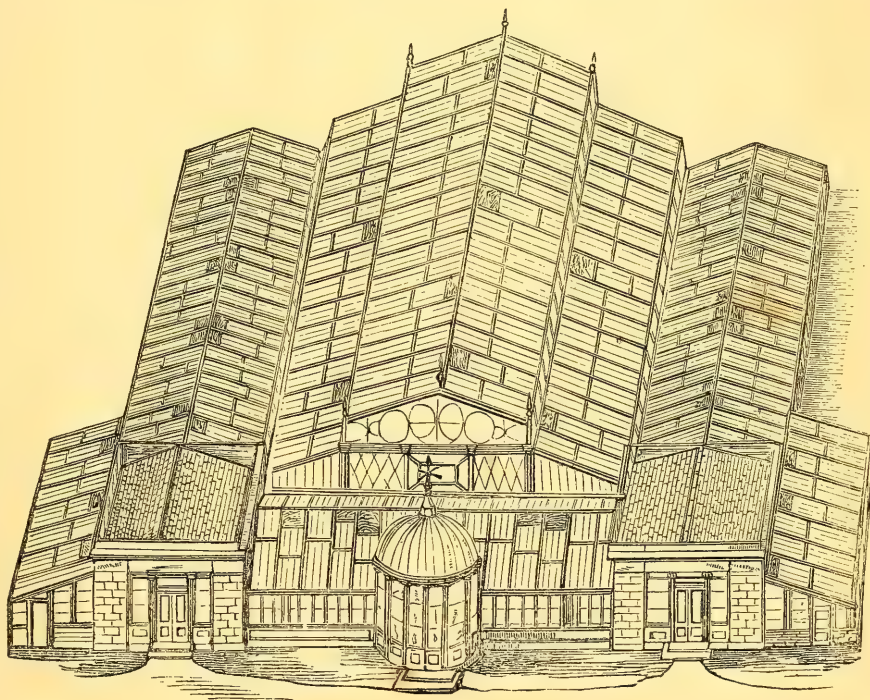
In the reports of the Proceedings of the Pomological Convention, I am made to say that the *Pinneo* ripens in December; this is incorrect; it ripens during the first part of September.

THE NEW WINTER GARDEN OF MESSRS. WEEKS & CO., CHELSEA.

MESSRS. WEEKS, the eminent horticultural architects, of King's Road, Chelsea, having recently completed the erection of a house, termed a "Winter Garden," we were invited to inspect the same, and feel bound to add our testimony to its perfect adaptability to the purpose intended, as well as to the good taste displayed in its plan and construction. The erection is entered through a conservatory from the King's Road, and covers a space of about twenty-five yards by thirty. On one side is a large stove, and on the other a greenhouse, with seed and waiting-rooms in front. The Winter Garden is a very ornamental building, and the interior space is laid out in four raised beds of considerable size, with a circular one in the centre; the latter is now (August 20th) occupied by *Japan Lilies*, with a fine specimen of *Araucaria excelsa* in the middle, and the four corner beds

are filled with *Camellias*, *Orange trees*, *Azaleas*, *Fuchsias*, *Humea elegans*, *Agapanthas*, *scarlet and variegated Geraniums*, etc. The beds are each raised a foot or more above the level of the floor, the sides banked up with turf, and edged with *Lycopodium*. The spaces between the beds afford plenty of room for walking about, and the construction of the building is such as to give the whole a light, and remarkably cheerful appearance.

The Winter Garden, together with all the house in this nursery, is



heated by one boiler, supplying about 7000 feet of pipe, and capable of maintaining any desired amount of heat at a very low cost.

The inspection of Messrs. Weeks' Winter Garden will afford much gratification to every one interested in the progress of horticulture; as a proof we have but to point out that it has already been visited by a great number of practical gardeners, the principal nurserymen, and many of the nobility and gentry.—*London Florist*.



ROSES.



THE admirers of the rose, and who is not? will now be looking about for additions to their stocks, or replacing those whose lives from any cause have been lost. From time to time lists of the newer kinds have appeared in these pages, and as they become more plenty they will be introduced. To-day, we confine ourselves to the practical, to a list of such as all can procure; and we call to our aid Mr. Buist's new catalogue, as containing an experienced person's views of the best kinds accessible to all. We take it from his "Almanac and Gardener's Manual, 1859." He introduces it thus:

"The rose forms the chief source of attraction;—with the different classes, viz.: *Hybrid Perpetual*, or *Remontant*, *Hybrid China*, *Provence*, *Damask*, *Moss*, *Perpetual Moss*, *Prairie*, &c., all of which are hardy; and the *Tea*, *Bourbon*, *Noisette*, *Bengal*, and other classes, many of which withstand our winters—an endless variety may be commanded. A few beds of these on the lawn produce a profusion of flowers daily, during the season from May to November;—June and September are however the great rose months. In June, we have the *Hybrid China*, *Multiflora*, or *June roses*; the *Hybrid Perpetual Mosses*, and *Provence*, as well as the tender *Teas*, *Bengals*, *Noisettes*, and climbing varieties, forming an array of distinct sorts sufficient to satisfy the most dissimilar tastes. All these may be secured by a little foresight and attention; full directions are given in our 'Rose Manual,' last edition, and a select list is here appended.

SELECT LIST OF ROSES.

SIX HYBRID PERPETUAL OR REMONTANT.

- | | |
|---------------------------------|----------------------------------|
| 1. <i>La Reine</i> , | 4. <i>Wm. Griffith</i> , |
| 2. <i>Jules Margottin</i> , | 5. <i>Enfant de Mt. Carmel</i> , |
| 3. <i>Giant of the Battle</i> , | 6. <i>Baron Prevost</i> . |

FOUR TEA, (*Indica Odorata*.)

- | | |
|-----------------------------|------------------------------------|
| 1. <i>Devoniensis</i> , | 3. <i>Saffrano</i> , |
| 2. <i>Gloire de Dijon</i> , | 4. <i>Triomphe de Luxembourg</i> . |

FOUR BOURBONS.

- | | |
|-------------------------------|----------------------------------|
| 1. <i>Hermosa</i> , | 3. <i>Duchesse de Thuringe</i> , |
| 2. <i>Sir Joseph Paxton</i> , | 4. <i>Doctor Leprestre</i> . |

FOUR NOISETTE.

- | | |
|--------------------------------|---------------------------|
| 1. <i>Fellenberg</i> . | 3. <i>Isabella Gray</i> , |
| 2. <i>Caroline Marniesse</i> , | 4. <i>Cromatella</i> . |

FOUR BENGAL OR DAILY.

- | | |
|------------------------|----------------------------|
| 1. <i>Pink Daily</i> , | 3. <i>Cels</i> , |
| 2. <i>Agrippina</i> , | 4. <i>Lady Warrender</i> . |

FOUR HYBRID CHINA.

- | | |
|--------------------------|-----------------------------|
| 1. <i>Coupe d'Hebe</i> , | 3. <i>Paul Ricaut</i> , |
| 2. <i>Fulgens</i> , | 4. <i>Madame Plantier</i> . |

FOUR MOSS.

- | | |
|----------------------------------|----------------------------------|
| 1. <i>Comtesse de Murinais</i> , | 3. <i>Luxembourg</i> , |
| 2. <i>Princess Adelaide</i> , | 4. <i>Perpetual Moss Salet</i> . |

TWO PRAIRIE.

- | | |
|-------------------------------|-----------------------------|
| 1. <i>Queen of Prairies</i> , | 2. <i>Baltimore Belle</i> . |
|-------------------------------|-----------------------------|

MISCELLANEOUS.

- | | |
|-------------------------------|------------------------------|
| 1. <i>Persian Yellow</i> , | 4. <i>Madame Hardy</i> , |
| 2. <i>White Microphylla</i> , | 5. <i>Provence Cabbage</i> . |
| 3. <i>Fortune's Yellow</i> , | |

"The above comprises a complete assortment of the various classes, three dozen plants in all, which would cost about twelve dollars."

ENGLISH STRAWBERRIES.

BY JOHN SAUL, WASHINGTON, D. C.

In the January number of the *Horticulturist* is an article headed, English Strawberries versus Natives, by D. M. Richard. Would not good culture versus bad, have been more appropriate? for on the outset Mr. R. remarks, "To make any fruit profitable for market there are several things requisite,—fine flavor, good size, and appearance, hardiness, regular and good crops, with the *least labor*." I will take these requisites in the order in which they begin: first on our list is fine flavor. Is it really necessary for me to tell any cultivator of Strawberries that Alice Maud, Victoria, Kitley's Goliath, British Queen, &c., are superior to a Scarlet? I always understood from my own experience, as well as the writings of the best Pomologists, that the first and principal characteristics of the Pine Strawberry (to which class all these belong) was its exquisite flavor. At the June Exhibition of the Washington Horticultural Society, the two past seasons, the Strawberries which received prizes for high flavor were these veritable foreign sorts. Why did not Mr. R. appear in competition with his little Scarlets? The public like facts, and the fruit which bears away the premium in a spirited competition, will be by discerning horticulturists accepted as best. If Mr. R. is really serious when he says "Alice Maud" is deficient in flavor, I would reply, "there is no accounting for taste," and this point is not worth arguing farther. The next requisite, size, appears to me about as tenable as the first. Mr. Doubleday, of Epping, near London, grew a Pine Strawberry 8 inches in circumference. British Queens are frequently shown there 6 inches in circumference. Mr. Lambert, of Alexandria, Va., showed, at the Washington Horticultural Society, in 1857, a dish of Magnum Bonum (a genuine Pine), many of which could not have been much less than 6 inches in circumference; they might with much credit have been shown in London or the Crystal Palace; I regret much I had not an opportunity of measuring some of these magnificent fruit. Mr. John Slater, of Alexandria, grew a fruit of Victoria the past season which weighed over an ounce. A querist in the *Horticulturist* not long since wished to know, if the figures given in the plate of this fruit were exaggerated. You well know, Mr. Editor, they were under size on the day I gathered the fruit of Victoria, with Mr. Cammack; he had at the time gathered and fit to gather, some hundreds of quarts

of Victoria, the greater portion equally fine with the fruit sent ;—what a sight this would be for Mr. R. to behold, and what a figure his little Scarlets would cut near them ! Next on the list we find appearance ; if large size and a bright color do not constitute good appearance, my knowledge of this quality is at fault, and we will leave it for the next,—hardiness.

The most delicate Strawberry I have ever seen, when grown in a properly drained soil and mulched in the fall, will pass through the winter safely ; the burning sun of summer I find far more injurious to all Strawberries, than cold,—that there are many varieties of foreign Strawberries which cannot withstand our burning sun I am fully sensible of ; there are again others, which will stand our fiercest sun, as well or better than any native sort ; to this latter class belong Victoria, Comte Flanders, Triomphe de Gand, Vicomtesse Hericart de Thury, &c., whilst their power of resisting cold is equally great. I cultivate all the leading Native and Foreign sorts, give no protection during winter,—and if Mr. R. will favor me with a visit at the opening of spring, he can judge for himself whether the varieties I have named, and many others, will present as good an appearance as the natives ; by repeating his visits in the dog days, he can judge of the effects of the sun's rays upon them. That Messrs. Cammack and Slater will be equally courteous I make no doubt ; the place of the latter is not a great distance from Mr. Richard's. Next comes "regular and good crops ;" these I can assure the reader will follow good culture ; it has done so with the gentlemen named by me, and the extent to which they cultivate them is the best proof of this ; commercial gardeners will assuredly grow the most profitable.

We have now arrived at the last requisite, "*least labor.*" And here I must admit Mr. Richard's Scarlets have the advantage ; they are admirably suited for the "*least-labor*" system, which means grass and strawberries together, the strawberry patch to be mown soon after the fruit is gathered, and in place of a nice mulching of rotten manure in the fall, the grass has grown and become matted through the plants, "to prevent their freezing out during winter." In spring they are cleaned expeditiously by burning the patch over, and the plants are ready to bear again. Such is the least-labor system, and under which Foreign Strawberries pertinaciously refuse to grow, or if they do, drag out a miserable existence, and realize in the market twenty cents per quart, at which price Mr. R. informs us he has seen "Alice Maud" sell. Did he ever know Mr. Slater or Cammack to sell at that price ? and is he cognizant of the fact, that the former of these gentlemen frequently obtains a dollar per quart on their first appearance in market. How these crops are produced, I will make an extract from my article alluded to by Mr. R., or the question will be naturally asked : How came these varieties to succeed to such perfection with the gardeners here named, whilst they have so signally failed in the hands of others in the vicinity ? I answer, good culture. These men know the value of deep trenching, high manuring, and good after-care, such as keeping them perfectly clean from grass and weeds through the summer, and the ground loose and broken. Persons not disposed to give such culture, but to depend upon the plough, and in case of a failure of a strawberry crop, to take off a crop of hay or clover, had better by all means stick to their scarlets ; they are far more satisfactory. By scarlets I mean nearly all our native varieties, as few—very few, possess the least trace of a pine, not excepting the best of American strawber-

ries, Hovey's Seedling. This must be apparent to any person conversant with the original types of our now cultivated strawberries.

"I am fully aware that many English varieties are not suited to our climate; others are disposed to burn. The nearest to perfection that a fruit reaches, the greater care and higher culture it requires: it is so with all garden vegetables, with florist's flowers and plants. Neglect the Dahlia, Rose, Holyhock, or Pansy; how soon do the flowers of the three first become single and poor, and the last diminutive in size. Our finest cattle demand the greatest care. Apples are attacked by borers; pears are subject to blight; peaches, gum; plums, apricots and nectarines are injured by curculios; grapes, mildew; corn, fires; wheat has smut; and our potatoes rot; yet persons are found to cultivate one and all of them."

To the above I would add, not only should the ground be trenched and highly manured, but the soil should be an adhesive loam approaching to clay; on thin, light, or sandy soils I have never known them to succeed. Mr. John Slater assured me the finest Alice Mauds he had ever grown were produced on a hard gravel bank, graded down to the subsoil, the latter having been highly manured and broken. Dr. J. H. Bayne's failure was known to me at the time I wrote my letter. A Long Island nurseryman noticed it in his catalogue, as a proof of the failure of foreign varieties here; yet, whilst this failure was heralded abroad, Messrs. Slater, Cammack, Howlett, etc., were producing the most surprising crops. It reminds me of a fact, probably known to most of my readers. A scientific man, Dr. Lardner, delivered a lecture in Bristol, England, on the impossibility of navigating the Atlantic by steam, yet at the very same time, in that city, some simple-minded merchants were engaged in building the Great Western steamship, which, in spite of the predictions of that philosopher, safely opened a pathway for steam over that stormy ocean. And in our more humble sphere, where Dr. Bayne has so signally failed, hard-fisted market gardeners have succeeded. Permit me, however, to add my testimony to Dr. B.'s skill as an orchardist and market gardener, and to the much good his influence has exercised in the region where he resides. If Dr. Bayne's soil is light or sandy, or should he not have given them the system of culture which I have described, failure must have been the inevitable consequence; but if, on the contrary, his soil was suitable—well trenched, manured, and cultivated, and failure was the result, the cause of this failure is worthy of investigation.

Mr. Richard says, "There is no doubt, with equal cultivation, our leading American strawberries will throw every foreign variety far in the back-ground as a profitable market fruit; such has been the experience of Dr. Bayne, and if I am not mistaken, such is the opinion of Mr. Cammack, and nearly every strawberry grower in the neighborhood of Washington city." On the least-labor system, the foreigners will undoubtedly be thrown in the back-ground, but on the good-culture system the result will be somewhat different. Who are "nearly every strawberry grower in the neighborhood of Washington city?" Mr. R. will probably have heard of the two or three tailors, who styled themselves, "We, the tailors of the city of London," and its application he will understand, when he names another gentleman and himself as "nearly all the strawberry-growers in the neighborhood of Washington city." The use made of Mr. Cammack's name was gratuitous. Mr. C. has assured me personally (since Mr. R.'s letter appeared), that his

opinion was the reverse of that attributed to him ; he expressed surprise at the use made of his name by a gentleman unknown to him, as Mr. R. is, and endorsed what I have previously written ; not only have Messrs. Cammack, Slater, and Howlett, grown these strawberries successfully, but many others, among whom I may name Mr. I. K. Watt, at the Washington Observatory ; Mr. I. Small, of Georgetown ; Mr. D. Clagett, an extensive orchardist near the city. The gentlemen named are among the first Horticulturists here—nearly all members of the Washington Horticultural Society, and have the past two summers shown fruits of extraordinary beauty, but where Mr. Richards has not yet appeared “to throw them into the back-ground.”

I cannot let this opportunity pass without noticing the high system of culture adopted by Mr. Cammack, with his fruits and vegetables ; more than thirty years has he steadily pursued it. When he first commenced strawberry growing he informed me that they were selling in market at four, and none over six cents per quart,—yet at the very outset he got twenty-five cents per quart. In connection with good culture he related a fact which is worth recording : a year or two since a gentleman calling at his stand, inquired the price of his strawberries ; on being informed of the price (twenty-five cents per quart), he remarked he had been in Baltimore the day before, and had seen them sell at six cents per quart ; to which Mr. C. replied, he had the evening previous sent 100 quarts to Baltimore, for which he received \$25,—an evidence that good culture will pay.

I could point out the same superior culture in his peaches and cantalopes, asparagus ; one vegetable, celery, which he has now in market, and which the public can any day see, is of the highest excellence ; strangers to our city say it is superior to any which they get in any other city in the Union, the price of this vegetable is about six cents per stick, whilst Mr. C. is receiving for his best ten cents ; market gardening about our city has been advanced much by the example of Mr. C., and in our sister city, by his contemporary, Mr. John Slater.

The following strawberries have succeeded here exceeding well the past season (1858), Victoria, Comte de Flanders, Vicomtesse Hericart de Thury, Triomphe de Gand, La Reine, Seedling, Eliza, etc., and may be taken as standard sorts, and be grown with confidence by any persons who wish a really good strawberry, being large, showy, and of exquisite flavor. Among the recently introduced varieties, Amazon, Exhibition, Jucunda, Magnum Bonum, Marquise de la Tour Mauburg, and Rival Queen, promise well, *in this climate*.

SHRUBBERY PLANTATIONS.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

THE most distinguishable feature in English gardens is, the massiveness of their ornamental plantations, and the rich verdure of the grass. On analyzing these shrubberies we shall find that, while much of their beauty depends upon the materials of which they are composed, and the skill displayed in the arrangement, much more is the incidental result of thick planting. In this respect there is much to improve upon in the formation of pleasure-grounds with us.

It is true that we cannot have the Laurels, Arbutus, Alaternus, Garyas, or view the Hollies and Rhododendrons of more favored climates,—for although the two last are natives, the holly is so impatient of removal that it is not available in quantities, and the Rhododendron requires peculiar situations in order to develop its true beauty.

This deficiency of evergreen shrubbery with us is severely felt by those desirous of ornamenting their grounds, and I would desire to call the attention of such to the fact, that by abandoning the immediate attempt to introduce choice low-growing evergreens, and plant largely of well-known, hardy trees, and keep them low and spreading if desired, by judicious and timely pruning, they would much sooner realize massive and effective scenery, and at the same time secure conditions that would enable them to cultivate successfully many beautiful and choice shrubs.

One of the best plants for these tree shrubberies is the hemlock spruce; cutting back and trimming the branches increases rather than diminishes its beauty. Even the rigid growth of the Norway fir may be checked, by cutting out the leading shoot and removing the points of the side branches. I have known most beautiful evergreen masses produced in this way. The white pine will assume a spreading form when similarly treated; so also the Scotch and Austrian pines, and in short, all trees may be kept dwarf by careful periodical pruning.

The Deodar cedar, on account of the silvery appearance of its foliage, is well adapted to brighten and relieve the monotony produced by the dark foliaged evergreens. It is rather tender, even in the middle States, and frequently loses the topmost shoots in severe springs, but this rather increases its beauty for our purpose, and I would strongly advise those who are about planting, to set out groups of three or more plants of the above, (the plants being four or six feet apart,) deprive them of all perpendicular shoots, and encourage them to spread horizontally; surround these groups with plants of dark foliage, and a very pleasing variety of winter scenery will be produced.

The *Pinus-pumilio* is a compact dwarf tree, suitable for edgings or marginal plantings; *Pinus cembra*, Swedish juniper, and the Irish yew, from their upright growth, will impart an expression to the mass.

Then we have a large-class of *Arbor Vitæ*s and *Junipers*, available for our purpose. The *Mahonias* are admirable in small thickets. The new *Mahonia japonica* promises to be perfectly hardy, and will furnish us with the long-wished-for desideratum,—a real hardy, broad-leaved evergreen shrub; it retains its color during winter, not changing to a reddish brown like the *M. aquifolium*.

Under the shade and shelter of these hardy shrubberies we may hopefully experiment, and with much probability of success, in the introduction of the beautiful Rhododendrons, *Kalmias*, *Laurus*, and *Laburnums*. Hollies in great variety would flourish when sheltered from the arid winds of spring. The *Rhamnus alaternus*, *Aucuba-Japonica*, *Phillyreas*, *Daphnes*, *Chimonanthus*, and the evergreen *Magnolias* would also be protected from excessive evaporation, and consequently pass through the severity of winter uninjured.

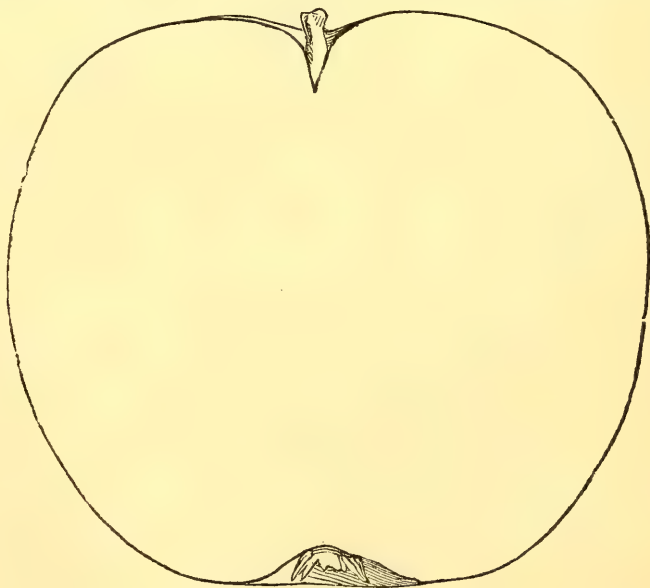
The beauty of evergreen plantations is very much enhanced in spring by introducing flowery deciduous bushes. The Dogwood, *Halesias*, *Magnolia conspicua*, *M. purpurea* and *M. soulangeana*, and the Judas tree, enliven the scenery during early summer; the dogwood and white magnolia are especially attractive when backed by evergreens.

In the matter of deciduous shrubbery we have no dearth of material; but the same treatment may be applied to deciduous trees, as suggested for evergreens. A novel feature might be produced by planting profusely of sugar and red maples, sweet and sour gums, tulip poplars, scarlet oaks, wild cherry, sassafras, etc., and keeping them in the form of low bushes; the great variety of color assumed by the foliage in autumn would have a brilliant effect, if the planting was situated so as to contrast opposing colors.

The subject might be treated much more fully, but as planting season is now at hand, these suggestions may direct attention to the matter to which they allude.

CHRONICAL APPLE.

THE tree that produced this apple originated about thirty years ago on the farm of Mr. John Cotton, Putnam co., Indiana. The original tree is still living,—an upright, thrifty grower, and very hardy; it is a moderate bearer, never breaking with its fruit, but disposed to bear more or less every year. Fruit above medium size, obtusely pearmain-shaped stem, short, and deeply



sunk in a narrow cavity, calyx open, and set in a narrow shallow basin; ground color green, changing at maturity to a pale yellow, with scattering blotches and stripes of pale red,—the ground color interspersed with a few curdly dots; flesh yellowish, remarkably firm and rich, with a mild sub-acid flavor; seeds closely imbedded in a very small core. This apple is eminently qualified for long keeping. I have kept some in a green state for two years, without any particular care.

R. RAGAN.

PLANTS FOR A POULTRY GARDEN.

THERE are many persons who are so partial to poultry as to make their fowls the first and the garden the second consideration, letting their young chickens have free range amongst their plants ; and others who, without making any pretension to having a garden at all, are glad to grow a few plants in the poultry run. I have always been in one or other of these lists, therefore I have some experience as to what may be grown without injury, where there are fowls.

Supposing the garden is rather confined in space, and the birds have not free range over the adjoining fields, it will be requisite to grow some green food for them to pick at. Nothing answers this purpose better than some plant of the Cabbage tribe,—as Kale, Sprouts, etc., which may either be sown or transplanted for their use ; they are so fond of these plants, that it is useless to attempt to grow them for any other purpose where fowls have access.

Provided a supply of such green food as they like is prepared for them, I have found that the following plants may be grown without being the least injured :—Jerusalem Artichoke, Potato, Broad Beans, Rhubarb, Parsnip, Carrot, Parsley, and most other potherbs ; Scarlet Runners and French Beans, at least until the seeds ripen ; Vegetable Marrow and Pumpkin, the plants being preserved from injury by a coop over them in their earliest stages ; Onions, Lettuce, Turnips, etc.

Bush fruit suffers considerably from fowls,—Currants, Raspberries and Gooseberries particularly. Strawberries are destroyed by being scratched over for insects ; but fruit trees generally flourish luxuriantly ; and I recollect, in several bad apple seasons, noting that the apple trees in the poultry run were always the most productive of any in the neighborhood.

Of course, these remarks, as to the plants that are not injured by fowls, apply only to those cases in which the birds are freely supplied with food ; for if kept in a state of semi-starvation, they devour turnips, beans, and many other things they will not touch if well fed.

I have now sixty Game Bantam chickens, of this year, running in my garden, and four old birds, and I cannot perceive that any of the plants in my first list have suffered injury.

I would wish it, however, to be understood, that I am not advocating, as a general rule, the introduction of poultry into gardens, but merely stating what plants can be safely grown where such arrangement is unavoidable.

W. B. TEGETMEIAR.

ADDRESS ON HORTICULTURE.

BY DAVID THOMAS.

(Concluded from p. 85, Feb. No.)

THE vigor of the vine may be increased and prolonged by layering thrifty shoots, which form roots of their own, and in effect become new and independent, though still attached to the parent vine. The importance of this method may be better understood when we learn that young vines are

generally free from mildew. For four or five years after my first planting, the fruit was always fair, while others in the neighborhood suffered much. This result occasioned great surprise to some horticultural friends, who understood the cause of this singular exemption no better than I did. Time, however, at last unraveled the mystery in part. When the wood became older, and the plant in consequence diminished in vigor, my grapes were blighted as badly as theirs.

I have observed the same thing in regard to the gooseberry. The more thrifty the variety, the less danger from mildew; and generally they are exempt till the bushes are several years old. We may therefore consider this shrub, like the raspberry, an *imperfect perennial*; and we ought to prepare new plantations in time, so as always to have a supply of this fine fruit.

I never think without regret, that so few people have apricots—so easily raised, and so delicious when ripe. It comes in, too, when neither plums nor peaches are to be had, with rare exceptions. I obtained a sort from Flushing, many years ago, under the name of “peach apricot,” which some pomologists pronounce a misnomer,—but whether true to its name or not, I should like to see the peach that is half as valuable. In every door-yard there ought to be one or two of such trees.

There is another fruit, too much neglected, which I would take the liberty to recommend. It is the American Mulberry. There is a very old, and a very good-natured maxim, to wit: “There is no disputing tastes,”—so when pomologists tell me there is another sort “incomparably finer,” I can only say—not in reply, but in excuse—that I procured the genuine English Mulberry, and that the fruit is so sour that I do not eat it. Well, some folks like sour fruit, such as the Cornelian Cherry, but let me have the American Mulberry in preference to either. The native trees in Western New York, however, bear much smaller fruit than some varieties do, that are found three or four degrees further south; and there is one in my fruit garden from that quarter, though probably not of the very best kind, that I value as highly as any other tree within that enclosure.

Many people like the mild flavor of the huckleberry; but generally our land is unfavorable to its growth. There is a low bush, however—the dwarf service berry, (*Aronia ovalis*)—that yields a fruit somewhat similar, and grows well in *heavy*, though not in *sandy* soils. It is as easily cultivated as the currant, and bears moderately well.

But why do we want so many sorts of fruits? For the same reason that we want so many sorts of food: the pleasure that springs from variety. Another not less cogent, however, might be given. In proportion to the number of kinds cultivated, are chances for a supply in unfavorable seasons,—for the frost often destroys one sort, and leaves another; and continued rains induce decay in some, and not in others, especially among plums and cherries. Some fair skin varieties of the latter were almost worthless this year; and some of the black have suffered, while the acid sorts, as the May Duke and Morello, have generally escaped. Let us, therefore, have many kinds; and if the best sometimes offer nothing, let us have the second best.

On a former occasion, I noticed how much the best flavor of fruits depended on culture: and that two of my pear trees yielded nothing fit to eat until the land was cultivated around them, when the products became excellent. I have now another instance to relate. Into the branches of a

May Duke surrounded by sod, I inserted scions of the Belle de Choisy, and for two years the cherries were insipid. Not suspecting the cause, as the May Dukes were fine, I wondered how it had ever attained such a reputation. At last the hogs rooted up and destroyed every spire of grass in it, the ground was well pulverized, and ever since the fruit has been delicious.

Last fall I had late planted cabbages that formed large tufts of leaves, but not good heads; and I had a hope that if I could preserve them till spring, they might grow into something useful; so they were set in a trench, very closely, side by side—some straw was thrown on them, and over that about two inches of earth. As the trench was ten or twelve feet in length, two tubes were set in near each end, to let off the bad air—just such as every cabbage depôt under ground, or potato heap ought to have. In the spring I was surprised at the result. Every green leaf had disappeared—the larger plants had formed good heads, though not so compact as those grown in the open air, and all were beautifully blanched, and fit for use.

One item more, and I have done. No insects, no birds, and no malady among fruit trees, have discouraged pomologists so much as the depredators of our own species—thieves in the proper sense of the word. Laws have been made sufficiently stringent, but a better public sentiment on this subject can only repress such outrages effectually; and to Horticultural Societies must we chiefly look for its general introduction. Your splendid exhibitions silently urge the spectators to produce fruit of their own. Every one that makes the attempt, enlists on the side of virtue and true civilization; and if there is room for it, becomes more moral. The man whose tree is robbed, feels sympathy for his plundered neighbor, that he never felt before; and the boy that guards his melon patch, feels more like a man, and learns to respect the property of others. In accordance with these remarks a late writer has pithily said, "I never knew a boy to steal fruit, whose father raised fruit himself."

ADDRESS OF JOHN JAY, ESQ.

THE Address of Mr. Jay, entitled "A Statistical View of American Agriculture, its Home Resources and Foreign Markets," delivered at New York, before the American Geographical and Statistical Society, and published by D. Appleton & Co., in a very handsome pamphlet, is full of topics for thought. Well has it been said that "the statesman who pretends to govern, without knowing the important facts which interest society, makes a more fruitless attempt than the philosopher who should propose to make a general classification of the beings which compose the three kingdoms of nature, without knowing the essential characteristics of them."

We should all rejoice that a statistical society has now turned its attention to agricultural topics, for it cannot fail to act as a good teacher where all before was guess-work.

From these pages we take pleasure in making the following extracts:

"Looking beyond the number of individuals employed in American agriculture, to the amount of capital invested in it, you have been already told that the Superintendent of the census estimated the value of the capital,

represented by agriculture in 1850, at five billions of dollars, and that represented by all other branches of industry at less than one billion, giving to agriculture more than five-sixths of the whole; and, although these figures may be but an approximation to the truth, the proportions are probably correct.

"Notwithstanding the enormous wealth of the metropolis, the agricultural interest pays *four-fifths* of the taxes.

"Prof. J. F. W. Johnston, in his Lectures on Agricultural Chemistry, says, that *nine-tenths* of the fixed capital of all civilized nations is embarked in agriculture.

"No man in England is so high as to be independent of this great interest, no man so low as not to be affected by its prosperity or its decline. The same is true, eminently, emphatically true, with us. Agriculture feeds, to a great extent it clothes us; without it, we should not have manufactures, we should not have commerce. They all stand together like pillars in a cluster, the largest in the centre; and that largest is AGRICULTURE.

"To the existence and power of the French Government, as one of their own writers has remarked, the mildew on an ear of corn, or the *oidium* on a bunch of grapes, is of more vital consequence than the splendor of the imperial jewels, or the marvels of a thousand handicrafts. Whatever in our day cuts off the small profits of the industrial classes in Europe, or threatens multitudes with starvation, strikes at the stability of the political institutions of the land, and wields a mighty influence whether for evil or for good.

"The very existence of thrones may be affected—indeed some think their existence has been determined,—by causes apparently insignificant as the rot in the potato, or the weevil in a grain of wheat.

"The number of square miles contained in the area of the United States of America, in the present year, is within a fraction of three millions (2,936,165), somewhat more than one-third the area of North America, exclusive of the West Indies, and nearly double the area of all Europe, excepting Russia.

"When the increase of our native and foreign population shall invest with the density of New England the whole territory of the United States, its population will amount to one hundred and twenty-three millions. With the density of the Middle States, of fifty-eight (57.79) to the square mile, it would amount to one hundred and seventy millions.

"The density of Spain (78.03) would make it two hundred millions. That of France (172.74) five hundred millions. That of Great Britain (332.00) six hundred and sixty millions, while the density of Belgium (388.60), were it possible to support such a population on this continent, would give us eleven hundred and fifty millions. Such a population, however, or anything approaching to it, is a thing impossible in the United States, for the reason that a large portion of its territory is a barren waste, incapable of tillage. Such is the character of the space between the 98th meridian and the Rocky Mountains, denominated "The Great American Plain," and the space from the Rocky Mountains to the Pacific, with the exception of the rich but narrow belt along the ocean, may also be regarded, in comparison with other portions of the United States, as a wilderness unfitted for the use of the husbandman.

EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

A WARM MARCH.—Spring fairly broke upon us in the middle of March, with the prospect of early work and beauty,—possibly too early for the fruit buds,—but let us always hope for the best.

MR. WILLIAM SAUNDERS has accepted the office of laying out the great cemetery of Chicago; of the suitableness of the site we can speak from actual inspection, and shall have something more to say about it and the Great West next month.

LENOIR AND WARREN GRAPE VINES, from Peters, Harden & Co., Atlanta, Ga., will enable us to judge of their value in a middle climate.

THE RHODE ISLAND HORTICULTURAL SOCIETY holds an exhibition in June, for which occasion a liberal list of premiums is announced.

The schedule for 1859 of the Chester County Pennsylvania Horticultural Society, has been issued. It includes manufactures of cotton, wool, and paper.

PARKS are to be the feature of American cities. At New York, every facility of money and men has been granted; at Philadelphia, Mr. Sidney carried off the first prize of \$500 for Fair Mount Park; in the West they are talking of parks everywhere, and will have them, too. They will prove great civilizers, and incite to private improvements wherever they are well made and properly planted.

NORTH CAROLINA.—We hear quite too little of the amateur horticulturists of North Carolina, and therefore hail with particular pleasure the Annual Address delivered by Senator Thomas L. Clingman, before the State Agricultural Society in October last. Incidentally it touches upon many topics of interest, and descants upon the resources of the State, of whose importance those who merely traverse its sandy belt in the railroads, have no just idea. The western portion is not inferior to that of Virginia, and possesses a fine climate in which fruits will be extensively naturalized. There is a race of high-minded gentlemen and scholars here whom we should be glad to see members of our parish, and pursuing fruit and flower culture as well as agriculture and politics. Cicero, bent on political life, is yet full of longings for his country house at Tusculum; Horace, the favorite of the court of Augustus, and with a keen relish for court pleasures, yet loves the sights and sounds of his beloved Arno's banks.

North Carolina has an interesting, romantic history. In 1854, the first Europeans who ever touched the shores of any one of the old thirteen States, approached this coast under command of Amadas and Barlowe. In the report to Sir Walter Raleigh, drawn up by the latter, it is said that two days before they came in sight of the land, "We smelled so sweet and so strong a smell, as if we had been in the midst of some delicate garden, abounding with all kinds of

odoriferous flowers." On reaching the land it was found "so full of grapes, as the very beating and surge of the sea overflowed them, of which we found such plenty, as well there as in all places else, both on the sand and on the green soil, on the hills as in the plains, as well on every little shrub, as also climbing the tops of high cedars, that I think in all the world the like abundance is not to be found; and myself having seen those parts of Europe that most abound, find such difference as were incredible to be written." Inside of the long narrow tract of islands, along which they coasted for two hundred miles, they found what "appeared another great sea," between them and the main land. Everywhere they were struck with surprise, as they beheld the variety, the magnitude and beauty of the forest trees, which not only surpassed those of "Bohemia, Muscovia or Hercynia," but "bettering the cedars of the Azores, of the Indies, or Lybanus."

The following extracts from Mr. Clingman's address possess interest for our readers: "In the elevated parts there is almost every variety of landscape, soil, and production. At its extreme borders, there rises up a mountainous region, with a bolder scenery and a more bracing climate. Few of our own citizens realize the extent of this district, or are aware of the fact that it is three hundred miles in length, and has probably more than forty peaks that surpass in altitude Mount Washington, long regarded as the most elevated point in the Atlantic States. . . .

The landscape is variegated, too, by tracts of thirty and even forty miles in extent, covered with dense forests of the balsam fir trees, appearing in the distance dark as "the plumage of the raven's wing," and green carpets of elastic moss, and countless vernal flowers, among which the numerous species of the azalia, the kalmia, and the rhododendron, especially, contend in the variety, delicacy and brilliancy of their hues. From the sides of the mountains flow cold and limpid streams along broad and beautiful valleys. Though such a region as this can never weary the eye, its chief merit is, that almost every part of it is fitted to be occupied by, and to minister to the wants of man. . . .

While the seaboard counties have trees peculiar to that region—like the cypress, juniper, live-oak, and the gigantic pines of the swamps, fit to become the "masts of great admirals"—and the mountains such varieties as are suited to a harder climate, the State, as a whole, seems to contain representatives of almost all the trees of the North American forest, in their fullest and grandest development, and afford in the greatest profusion all manner of timber and beautiful woods for the uses of the artificer.

When we look beneath the surface of the earth, there are abundant objects of interest. North Carolina has the distinction of being the first of all the governments of the world that ordered a geological survey of its territory; and she has, in my opinion, a greater variety of mineral substances than any single State of the Union."

The grape is indigenous to all parts of the State, and it is believed North Carolina will become a great wine-producing region. Mr. Clingman has penned a scholarly and very attractive address, for the receipt of which we are much indebted to his own frank.

THE NEW PATENT OFFICE REPORT is a valuable book, and may be read with profit by all. We may point to the essays on salt-making, on animals, on the Sorghum cane, fruits and wine, and textile and forage crops, succeeded by Professor Joseph Henry's on meteorology, as highly creditable.

Major L. Conte, of Philadelphia, contributes an article on American grape vines, in which he says that all our American grape vines require a different treatment from those of Europe; and agreeing with some of our late correspondents, he asserts that even the pruning of them in the most scientific manner does not appear to produce any good effect; but if left to their own growth, they are more productive than when they fall under the hands of the most skillful gardener. "I have never seen," he continues, "any vine, comparatively speaking, produce such large crops of fruit as those which were never pruned and trained upon a stake, being conducted from one festoon to another, at such a distance as the length of

the stem required. By this means the clusters of berries hang down from the branches, and have the full benefit of the sun and the air to bring them to the greatest perfection."

After speaking of the Isabella and Catawbas as sweet and agreeable, Major L. Conte says, "But the best of all the varieties is the white-fruited, which does not differ in the leaf from the first described, (the Fox grape,) but the racemes are large, long, and dense, the berries oval, white or green, with a slight coppery tinge on the side exposed to the sun. None of our American vines is so worthy of a careful cultivation as this." What grape does he allude to? Is it the Anna?

Professor Henry has a remark or two which we copy with approbation:—" *Mere Practical Men*. We have no sympathy with the cant of the day with reference to 'practical men,' if by this term is meant those who act without reference to well established general laws, and are merely guided by empirical rules or undigested experience. However rapidly and skillfully such a person may perform his task, and however useful he may be within the limited sphere of his experience, and in the practice of rules given by others, he is incapable of making true progress. His attempts at improvement are generally not only failures, involving a loss of time, of labor, and of materials, but such as could readily have been predicted by any one having the requisite amount of scientific information. It is the combination of theoretical knowledge with practical skill, which forms the most efficient and reliable character, and it should be the object of the agricultural colleges to produce educational results of this kind. * * *

"The great facts of the future of agriculture are to be derived from the use of the microscope, the crucible, the balance, the galvanic battery, the polariscope, and the prism, and from the scientific generalizations which are deduced from these by the profound reflections of men who *think* in contradistinction to those who *act*. The intelligent farmer should be able, as already said, properly to appreciate the value of scientific discoveries; and for this purpose his studies should not be confined merely to rules or empirical receipts, but also to the general principles on which they are or should be founded."

NEW GARDEN SHRUBS, &c.—The planting season having arrived, it may be well to remind our readers of some of the new and rarer shrubs which are now in request. Among them are *Prunus Sinensis flore albo pleno*. It forces beautifully, and in a common greenhouse will display in January and February a great profusion of superb white flowers. But it is as a perfectly hardy out-door shrub that it is especially valuable. Indeed, there has not been so important an addition to our blooming shrubs for years.

The fine double *Spirea Revisii flore pleno*, though not so new as the plant just named, is very beautiful, and quite the best of its valuable class.

Stuartia pentagynia is one of the larger-growing shrubs, attaining the height of fifteen to twenty feet. Though an American plant, it is yet rarely met with, and indeed, has no regular common name. It bears in July and August a flower of the form of a single Camellia, and cream-colored, with a brown centre. No one who cares for flowers, when they are so scarce as they are with us in the hotter summer months, should be without this member of the Camellia family.

One wonders that so fine a tree as the *Andromeda arborea* should so seldom be met with in ornamental grounds. Its spring flowers entitle it to a place, and the deep color of its foliage in the autumn is striking and very beautiful. It belongs to the Erica family, and is known under the common name of Sorrel Tree.

Some of the new varieties of the justly admired *Wistaria* (*Glycine Sinensis*) are deserving of notice:—*Wistaria Sinensis flore albo* is not an early bloomer, but can with confidence be recommended. Planted with *Sinensis*, the contrast of its beautiful white flowers with the blue of the latter is very superb. *Wistaria frutescens magnifica*, a European seedling of the American species, has flowers of a large delicate violet, with a white eye. Its strong growth and beautiful bloom make it a great acquisition. Among the new climbers are the honeysuckles, *Lonicera*

brachypoda and *Standishii*; they are new evergreen varieties and much valued. *Clematis Hendersonii* is an erect sort, bearing a profusion of dark blue flowers for a period of from two to three months. *Clematis Sophia*, *monstrosa*, *Helene*, *argusea grandiflora*, and *Sieboldii*, or *bicolor*, are Japan varieties, and much admired by lovers of choice vines.

While naming these, we cannot forbear calling attention to *Bignonia grandiflora*, long known to many. Its superb flowers are abundant through the summer, and it is found to be a decided acquisition to the number of *pot* plants. We must also name *Salix cuprea tricolor*, a very curious and pretty sort of willow of late introduction.

ARCHITECTURE AND ITS POWER.—Alluding to the too general impression that you cannot feel interested in architecture, that you do not, and *cannot* care about it, Mr. Ruskin says—you think within yourselves, “it is not right that architecture should be interesting. It is a very grand thing this architecture, but essentially unentertaining. It is its duty to be dull—it is monotonous by law; it cannot be correct and yet amusing.” Believe me, it is not so. All things that are worth doing in art, are interesting and attractive when they are done. There is no law of right which consecrates dullness. The proof of a thing's being right is, that it has power over the heart, that it excites us, wins us, or helps us. All good art has the *capacity of pleasing*, if people will attend to it; there is no law against its pleasing; but on the contrary something wrong either in the spectator or the art, when it ceases to please.

FOUNTAINS.—Who ever said anything about fountains half so clever as this: There is no subject of street ornament half so wisely chosen as the fountain, where it is a fountain of use; for it is just there that the happiest pause takes place in the labor of the day, when the pitcher is rested on the edge of it, and the breath of the bearer is drawn deeply, and the hair swept from the forehead, and the uprightness of the form declined against the marble ledge, and the sound of the kind word or light laugh mixes with the trickling of the falling water, heard shriller and shriller as the pitcher fills. What pause is so sweet as that—so full of the depth of ancient days, so softened with the calm of pastoral solitude?

BUILDING ONE'S HOUSE.—“I would have,” says the same author, “our ordinary dwelling houses *built to last*, and built to be lovely; as rich and full of pleasantness as may be, within and without, and with such differences as might suit and express each man's character and occupation, and partly his history.

TOBACCO.—Tobacco and its adulterations, is the title of a new English book by Henry P. Prescott; it proves that Europeans smoke a compound of the leaves of rhubarb, docks, burdock, beech, plantain, oak, and elm, and other unsavory compounds. He shows that the leaves of different plants are frequently covered with minute hairs, which, to a casual observer, look all alike, but on examination with the microscope they are found to present differences so decided that the kind of leaf to which they belong can be clearly indicated. Thus the minute fragments of leaves may be made to tell the story of their origin.

EGGS.—Statistical returns show that the supply of eggs to England from France last year reached 200,000,000.

GRAPES.—We are kindly permitted to copy portions of a letter from a grower of grape vines to an Eastern friend.

The advice seems to us to contain common sense, and to the point: and on the writer's part is so unselfish, that we cannot but commend it to our readers; especially noticing what he says about the purchase of a great number of varieties.

“I cannot advise you to the purchase of a great many sorts of vines. Many of the kinds blazoned abroad with great names and much advertising, are probably no improvement upon the old established and well tried sorts. . . . The *Clara* you had better buy at home, in Philadelphia, and not send to Rochester for what Peter Raabe can furnish. . . . Among the varieties that we cultivate, (white, amber, and black,) some are very hardy—some are very early—some are very sweet—some are very juicy—some are very large—some bear great crops—some have little or no pulp and few seeds; and some have thin

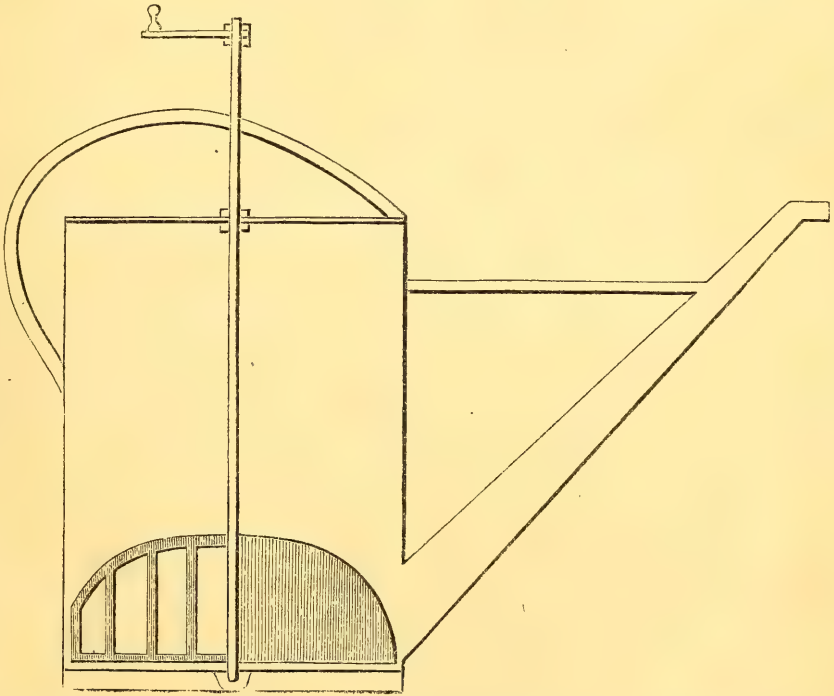
skins and delicate flavor: but you will with difficulty find a variety that combines many of these qualities. . . . Deal with nurserymen whom you can trust; for all the watching in the world won't make a rogue honest: and you had better pay a fair price for the genuine article than to get a spurious vine for half a dime. . . . Think how many good vines you wish to cultivate and can cultivate well—then think how many of them you wish to be very early; but do not calculate on these early ones being the best in quality—decide whether you want any very large grapes—very sweet grapes—very juicy grapes, &c., and above all, be particular to know whether you need perfectly hardy vines or not. If you can protect them each winter and do not need to be so careful to secure the hardy sorts, you can often among the 'half hardy' get better flavored and more delicate fruit.

Most truly yours, &c.,

C. P. BISSELL.

Rochester, N. Y.

WATERING POT FOR ARTIFICIAL MANURE.—This watering pot was invented by Dr. Wendenbush, of Wurtemberg. By the use of this, one part of manure to twenty parts of water, or charcoal powder at the same rate, is easily mixed by means of turning the spindle. The powder being perfectly mixed with the water has no time to settle before it is discharged



where it is wanted. The effect of this manure is too well known to need mentioning here. It will be seen that the principle is somewhat like that of some churns. It has been much adopted in Germany.

By the use of charcoal powder the ammonia in the manure employed is absorbed and retained, and destructive properties are modified.—*Deutsches Magazine, Stuttgart.*

DR. HOOKER'S beautiful *Flora of Tasmania* continues to appear with admirable punctuality. Only the other day we announced the publication of the sixth part, with its charming figures of Tasmanian Orchids; and the seventh number is now before us, with a continuation of the Orchids and letter-press as far as the mosses, which have been entrusted to the care of Mr.

Wilson, the learned muscologist. The drawings of *Caladenia*, an exquisite form of Australian Orchids, exceed in beauty anything which the work has yet produced.

GRASS AND ITS LESSONS.—Perhaps the finest passage relating to grass in our literature is found in Ruskin's essay, which runs thus: "There are several lessons symbolically connected with this subject which we must not allow to escape us. Observe the peculiar characteristics of the grass, which adapt it especially for the service of man, are its apparent *humility* and *cheerfulness*. Its humility, in that it seems only created for the lowest service,—appointed to be trodden on, and fed upon. Its cheerfulness, in that it seems to exult under all kinds of violence and suffering. You roll it, and it is stronger the next day; you mow it, and it multiplies its shoots, as if it were grateful; you tread upon it, and it only sends up richer perfume. Spring comes, and it rejoices with all the earth,—glowing with variegated flame of flowers,—waving in soft depth of fruitful strength. Winter comes, and though it will not mock its fellow plants by growing then, it will not pine and mourn, and turn colorless and leafless as they. It is always green, and it is only brighter and gayer for the hoar frost."

CATALOGUES, &c., RECEIVED.—Catalogue of selected roses and other hardy plants, including both old and new varieties, cultivated and for sale by James Pentland, at the Green Mount Garden, Baltimore. This is a very full catalogue, including the newest and best plants known, and among them the new candidate for public favor, the Rose "George Peabody," of which we think very highly.

Catalogue of Fruit and Ornamental Trees, Shrubs, and Roses, cultivated and for sale by John Saul, Washington, D. C. A large list of all the best things known, and one which cannot fail to attract attention.

Cheltenham Nurseries; Fruit and Ornamental Trees, Shrubbery, &c. Hacker & Haines, on Oak Lane, near Germantown, Pa. A good assortment and on reasonable terms.

Catalogue of Fruit and Ornamental Trees, &c., &c., at the Nursery of W. L. Ferris, Throgg's Neck, Westchester co, New York. Everything that is desirable seems to be included.

R. Buist's Select Catalogue of Greenhouse, Hothouse, and hardy plants, near Philadelphia. Store 922 Market St.

A Descriptive Catalogue of Hardy Trees and Shrubs grown and for sale by Robert Buist, as above. Both catalogues are evidences of the knowledge and accuracy of the author, to whom it would be difficult to send an order for a plant or tree of value which he could not supply from his own houses or grounds.

"Recollections of a Life-time; or, Men and Things I Have Seen." By S. G. Goodrich, author of "Peter Parley's Tales."

This work comes out in a new dress from the publisher of the *Horticulturist*—two large and handsome volumes, illustrated and well-printed. As the history of the rise of an American boy, graphically told, Mr. Goodrich's life has few superiors, and we are sure that its principles are better than most.

Catalogue of Fruit and Ornamental Trees, &c., at the Harmony Grove Nurseries, Isaac Jackson & Co., Proprietors, Jennerville, Chester co., Pa. An extensive and valuable stock in the hands of reliable nurserymen.

Nursery of John C. Teas, Raysville, Indiana. Trade prices, 1858-9. A fine stock adapted to the wants of the great West.

Annual Catalogue of Southern acclimated trees, &c., for sale at the Pomaria Nurseries address Wm. Sumner, Pomaria, S. C. A very valuable catalogue.

Public Exercises at the inauguration of Rev. Samuel Ware Fisher, D.D., as the sixth President of Hamilton College, at Clinton, N. Y. Whatever they do here they do well.

Priced list of vines and plants, by A. W. Potter & Co., Grape-Lawn Nurseries, Knowlesville, Orleans Co., N. Y.

Catalogue of the trees, &c., cultivated at the Bellevue Nurseries, Canton, Mississippi, H. A. Swasey & Co., proprietors. Full and valuable.

R. Buist's Select Catalogue of Greenhouse, Hothouse, and Hardy Plants. Philadelphia, 1859-60. Such a list as is rarely sent out by any cultivator, and reliable.

The Sweet Potato, its culture in the North, with directions. O. S. Murray & Son, 20 Mile Stand, Warren Co., Ohio. Very complete and useful.

Bridgeman's Descriptive Catalogue, No. 6. Select Bedding Plants, Roses, Bulbs, &c., 878 Broadway, New York. Everything is here to suit a luxurious and educated demand.

Fruit, Ornamental, and Evergreen Trees, cultivated by Lewis Nicholson, Lake Erie Nurseries, East Rockport, Ohio.

Catalogue of Garden and Field Seeds, cultivated and sold by A. F. Mayher & Co., Agricultural Warehouse and Seed Store, at new stand, No. 54 Vesey St., New York.

ANSWERS TO CORRESPONDENTS.

ESTHER W.—Your query is a little out of the line of this journal. Refer to Ruskin, who says somewhere, if we are not mistaken, that there is really nothing to deserve admiration in the firing of packets of gunpowder, in the display of stocks of warehouses. But admiration excited by the budding of a flower is a poetical feeling, because it is impossible that this manifestation of spiritual power and vital beauty can ever be enough admired. Mark the distinction.

F. M. SANDERSON, M. D.—You will find all the particulars regarding an orchard house in our pages very soon.

REMUNERATION OF GARDENERS.—W. C. C.; on this subject we find a quotation from George Glenny, in the *Cottage Gardener*, which may partly apply to your query. It is from "The New Principles of Gardening," by Batty Langley, published in 1727. There was no doubt as much ground of complaint in old times as now. Batty says: "I cannot well conclude this section without taking notice of the great happiness a gentleman possesses when he is so well fixed with a skilful, industrious gardener, by whose judgment and care he is daily enjoying the pleasures and advantages of the best fruits, herbs, salads, etc., in the greatest perfection, which recompense is all as can be received for the expenses and labors thereof. And on the other hand, how unhappy it is for a gentleman to have an unskilful person descended from the tail of a coach, stable, etc., who taking upon him, first a blue apron, and then the name of a gardener, assumes the government of choice trees committed to his care, because he has been much acquainted with cleaning knives, sweeping stables, etc., which he thinks are necessary towards their pruning, as well as making hotbeds, etc., without considering that those trees and plants were obtained with much labor, long time, and great expense, which by his unskilful hand shall in one or two years' time be totally ruined, to the great loss of his master, and his eternal shame. I say where misfortunes of this nature happen, which is too frequent, 'tis a very great loss and disappointment, and a crime unpardonable; and therefore I cannot but take the liberty to say, that a good gardener deserves a much greater respect and encouragement than that of stewards, butlers, etc., who oftentimes undeservedly possess a much larger share thereof."

Gossip.

LICHENS which grow on the summit of trees, have been found to contain an uncommon proportion of oxide of iron, a curious illustration of the peculiar powers which various plants possess of separating the inorganic matters presented to them in their food. Certain lichens make the dye called litmus, largely used by manufacturers under the name of orchall or Archill. The common yellow pale lichen contains a peculiar coloring matter, called Parietin, of a bright yellow. This is heightened by a drop of nitric, muriatic, or sulphuric acid; while minute quantities of ammonia change it to a rich red, inclining to purple. The Iceland Moss is a

familiar illustration of the use of lichens. *Tripe de Roche*, a lichen, Canadian hunters have been reduced to subsist upon, and other kinds are eaten in the deserts of Asia, in large quantities, by the nomade tribes of those regions.

It is only lately that ferns have been well understood; to Mohl we are indebted for their illustration. One of the most interesting of them is that of the Baranets, or Baromets, called also the Scythian Lamb, in which, by cutting off the leaves, except on a small portion of the stalk of a woolly stemmed species, and turning it upside down, simple people have been persuaded that there existed in the deserts of Scythia, creatures half animal and half plant.

CLIMATOLOGY.—The central idea of the comparative climatology of the temperate latitudes of the continents of Europe and America, is that of *correspondence in like latitudes and like geographical positions*. This implies a symmetry of arrangements in the climates, which greatly assists in determining what the conditions are, and still more assists the practical business of putting them to use. Thus Vancouver's Island is analogous to the British Islands—in like latitudes and on the same side of the continent—and from observations near it, the cool summer, the warm winter, and general humidity of England, is found. The general inference may be drawn, that the cultivation and productive capacity of Great Britain may be reproduced on our Pacific coast, and all the vast systems of industrial, commercial, and social results which follow in the train of such conditions.

CORKS are often infested with a fungus that destroys their value. Happily these affections of corks are not common, but should they prove troublesome, we can recommend no better remedy than what we before suggested, viz., soaking the corks in *boiling* water, dipping the exposed ends in some resinous composition, and covering the whole with a metal capsule. It will be as hard then, we conceive, for the fungus to intrude into the sacred cavity, as it was for the genii to get out of the sealed box.

FUMIGATING PLANTS.—Observing a receipt for easy fumigation, I beg to hand you another, which I know from experience never fails, and is a still easier method; the plan was taught me by a foreman gardener, so I claim no originality of idea; but perhaps the hint may be as acceptable to amateurs as it was to me.

Get a wire riddle, or sieve, an article which ought to be in the possession of every one who pots flowers, and place it, bottom upwards, on three inverted flower pots, either on the floor, or lowest shelf of the greenhouse; then, on the riddle put a few red hot cinders, and on these some of the commonest rag tobacco. If economy is desired, mix double the quantity of damp moss with the tobacco, waive the riddle gently up and down to cause the draught to thoroughly ignite the moss, &c., replace it on the inverted pots, retire immediately, close doors and windows, and do not go in until the next morning, when the plants should be well syringed with rain water. I do this twice a year, and I keep my little greenhouse clear from blight, and all my plants clean and healthy.—B.

HEALTHY HOMES.—If unnecessary death and disease be things for which any one is to account; if the suppliers of our dwellings are answerable for economizing at the cost of life; if they have any duty in building for others; in short, if any man be responsible for human life wasted by human agency; if at the 'hand of every man's brother' shall be required the 'life of man,' then should every part 'of our dwellings be contrived according to whatever our latest science may prove necessary,' in order to make them healthy homes.

THE CAMELLIA-FLOWERED PEACH.—I send you, as a curiosity, a fruit of this peach. I have not tasted it, but it smells well.—*R. Glendinning*. [It would seem that all the double-flowered peaches have had a common origin, judging from the quality of their fruit. That with which Mr. Glendinning has favored us is a colorless fragrant Clingstone, with an agreeable sub-acid, tender flesh, which, however, has the fault of being slightly austere and bitter.]—*J. R. S., in the Gardener's Chronicle*.

ROSES BLOOMING LATE IN AUTUMN.—Some remarks having appeared in a late number

about roses then in bloom, I took pains to go to-day (Nov. 16) round the rose quarters in Mr. Epps' nursery, at Maidstone, and found the following fully in bloom. I would remark, however, that the ground is considerably elevated, and the subsoil limestone, covered with a strong, friable loam. These circumstances are, no doubt, favorable to late blooms of every kind, as well as of the rose. On the contrary, in Mr. Epps' nursery, at Ashford, which is in a level country, the roses are all quite out of flower. Whoever, then, has a roserie on an elevated situation, may plant the same sorts of roses, and expect blooms late in the autumn.

Roses in bloom, November 16th; Gloire de Dijon, Comte de Paris, Souvenir de Malmaison, Dupetit Thouars, La Biche, Comte de Nanteuil, Armosa, Duchesse d'Orleans, Devoniensis, Bourbon Queen, Aimée Vibert, Solfaterre, Safrano, Mrs. Bosanquet, Abricot, Sir. J. Paxton, and several others in bud.—T. A., in *London Florist*.

ECCENTRIC DINNER.—A paragraph is quoted in *Notes and Queries* from the *Inventor's Advocate*, dated nine years ago, describing a dinner given at the baths of Lucca by a certain Lord B—. The meat, fish, and vegetables were at least two years old, having been preserved in a way that is now common; the carafes were supplied with water which originally belonged to the sea, but had been changed into fresh water by a chemical process then recently discovered; the wine had been fished up by means of the diving-bell, from the bottom of the Thames, where it had lain in a sunken ship more than a century; and the bread was made from wheat found by Lord B— himself in one of the pyramids, and sown in England. To a repast of this kind, we may say, we could now add a dry powder liquefied even at the table into cream, the produce of the cow, and fruit of bygone seasons apparently freshly gathered. If such details had been given not a great many years ago in a fairy legend, they would have been criticised as impossibilities unnecessarily wild and extravagant.

HOW TO IDENTIFY STOLEN FRUIT.—When the thief gets off undiscovered with his booty,—the finest peaches, nectarines or apricots on the wall,—it is usual to give them up for lost. Who could identify fruit? Who could say, these things were stolen from me, and not from somebody else? Any person can do so who will take a very little trouble beforehand, in anticipation of the chance of robbery. Let him set a mark on his most promising pieces of fruit, when in a green state, by affixing to them, on the side next the sun, an adhesive label of his initials, or any other private mark. When the fruit is ripe, the labeled spot will still remain green; and when a capture is made, the thief will be petrified at finding that there is conclusive evidence against him, even in the peach itself. This precaution is described in *Notes and Queries*—English! of course.

OF Carpenter's well-known "Vegetable Physiology and Systematic Botany," a new edition has just appeared (12mo, Bohn, pp. 606), under the care of Dr. Lankester, who thus states the extent to which changes have been made from the last edition:

"I have only ventured to change somewhat the terminology, and to make those additions which the progress of research, in the lapse of time between the last and present editions, seemed to demand. The introductory chapters, on the structure of Cryptogamia, in the last edition of the work, I have withdrawn, to make room for new matter, and the account of the function of reproduction in these plants, both in the physiological and the systematical parts of the work, has been re-written."

Miscellanea.

WE regret to announce the decease of Professor Charles Morren, at Liège, in the 52d year of his age, after a very long and cruel illness. He was the author of a considerable number of curious papers on various points of interest in vegetable physiology, but was best known as the editor of the *Annales de la Société Royale d'Agriculture et de Botanique de Gand*, a Belgian

work of the same class as "Paxton's Flower Garden," which terminated in 1849 with its fifth volume.

THE LONDON ZOÖLOGICAL SOCIETY have had a notice of a talking canary—the second instance of the kind on record. The bird in question was, owing to the neglect of its parents, brought up by hand, and so became more familiar with human speech than ornithological warblings. At the age of three months it began to talk, saying *kissie! kissie!* and since then it has gone on adding to its vocabulary, and now repeats for hours a succession of phrases, comprehending about a dozen words, whistling from time to time a bar of *God save the Queen*.

CELERY, ESSENCE OF.—This will be found very useful for flavoring soups, or broth of any kind, and a few drops of it will communicate the celery flavor to a pint of soup. Bruise half an ounce of celery seed, and put it in a bottle; then pour over it a quarter of a pint of brandy; and after standing a fortnight well corked, strain the spirit from the seeds and bottle it, when it will be fit for use.

BEET ROOT, if roasted or baked in the oven, preserves its flavor much superior to the same vegetable if boiled.

RECIPT FOR WINTER SALAD.—Boil one or two onions quite mild; when cold mash them, and mix with sliced celery and cooked beet-root. Dress this salad with oil, vinegar, salt, and pepper. This salad, with hot meat, will be found very nice in the winter months.

UNFRUITFUL PEAR TREES.—By cultivating your border with cabbages and other vegetables, you drive the roots of your pear trees down into the subsoil, where they have not sufficient action and vigor to support and develop the young fruit. Dig a trench round them as deep as they go; cut off all tap roots that penetrate to the sub-soil; lay the young and healthy roots near the surface; and keep them there by encouraging them with a light top-dressing annually. Never grow cabbages on your fruit-tree borders.

MILDEW.—Paint your vines, stems, and branches, and the entire of your vinery and wall, with a mixture of lime, flowers of sulphur, soft-soap, and water. So soon as the vine buds begin to swell in the spring, sprinkle flowers of sulphur over the borders. During their growth in summer, though no mildew is perceptible, fill the house occasionally with fumes of sulphur, by placing some on plates of iron kept hot by boiling water. You can easily do this by many simple modes.

WIRE-WORMS IN BULBOUS ROOTS.—A gentleman informs us that for some time he could not bloom the *Lilium lancifolium* in the open borders, the bulbs being destroyed by the wire-worms. After trying various things, he at last bethought himself of using powdered glass, in the following manner. He prepared his ground, made a hole, put in a quarter of an inch of powdered glass, then half an inch of silver sand, and placed the bulb on the top; then half an inch of sand all round the bulb, with a quarter of an inch of glass all round, and then covered up in the usual way. He has not since been troubled with a single wire-worm, and blooms the plants beautifully.

THE YELLOW WAGTAIL.—A Yellow Wagtail has been amusing himself by thumping against a window, similarly to the one described by "Z. A., Dartmouth." A zinc water-spout crosses before the window, eight or ten inches distant; the Wagtail jumps from this, and raps the glass hard with its beak, sometimes from the window-sill. It does not appear much irritated, as if fighting with a supposed antagonist, and it cannot be for insects. Drawing the blind down does not affect its operations at all; neither does a stuffed hawk placed against the glass inside. It sometimes attacks another window for a short time. Some years ago one made a similar attack, but that was a black and white Wagtail; and in the spring of the year it persevered for some weeks, and then discontinued.—W. M., *Hanley Castle*.

HOYA CARNOSA.—"I beg to send you a report of a small plant of *Hoya carnosa*, which has flowered three times with me this summer, each time having from thirty to forty trusses of

bloom. I have counted thirty-three trusses fully expanded at once. The plant is grown in a six-inch pot, and is about fifteen inches high from the rim, and nine inches through, merely coiled round some sticks. Perhaps you, or some of your readers, will oblige by giving us an account of their experience with this fine old plant?"—J. CALGATE, *Gardener to W. F. Woolley, Esq., Campden House, Kensington.*

[There are several accounts in previous volumes of how to bloom this fine old plant. Plenty of light in summer, then moderate water, all the sun possible in autumn, and curtailing water, giving no more than will keep the thick leaves from drying until showing bloom next spring, are the principal things. We consider you have been extra successful with such a small plant.]

HOYA CARNOSA SEED.—"I have a *Hoya carnosa*, which has blossomed twice this year, and which has produced one seed-pod from the first bloom. Two or three years back, I had a dozen or more seed-pods. Will you tell me if this *Hoya* can be propagated by seed? and, if it can, whether there is any chance of a variety?"—J. FLAX.

[The seeds will grow easily enough; but there is no chance of the seedlings varying from the type; nor would there be any merit or improvement, if they did. There is no *Hoya* yet like the old *carnosa*, when grown first-rate, with a thousand clusters of flowers overhead, and a drop of honey hanging from at least 10,000 of the flowers. We did once see it so, and only once. It was planted in a rich new border, at the back of a large stove. The back wall was fifteen feet high and forty feet long, and two thirds of all this brickwork was covered with the good, honest old *Hoya*, and trained horizontally, as regularly as the joints of the bricks.]

Correspondence.

[Our London Correspondence.]

MR. EDITOR:—There has been rather a tempest in a tea-pot at the Colchester Chrysanthemum show, that has got into the country papers, and will amuse some of your gardening readers. It appears that a certain Mr. Hedge grew some specimen Chrysanthemums in *bottomless* pots, thereby gaining the same kind of advantage that others attempted in laying grape vines attached to big roots through pots, and when the grapes were ripe cutting off the branch. Mr. Hedge got the advantage of finer flowers by having more earth to his roots, but the trick was discovered, and his flowers cast out. He sued the Society for £2, transportation and expenses, and in return, the Society resolved "that Mr. John Henry Hedge having attempted to gain prizes in direct violation of regulation 13, he be forever expelled from the Society," which was carried 22 to 2; so poor John Henry cannot attempt to hedge, at least at Colchester, any more. "Forever" seems a great while, however.

I have lately witnessed the most extraordinary benefits from the use of what is called here East India oil, for sprains, &c., in cattle, and have been fortunate in procuring the following receipt for its manufacture, which may be valuable to some of your readers:—1 quart of linseed oil, 1 ounce of powdered verdigris, beat well together in a mortar; dissolve 1 ounce of camphor with 1½ ounce of spirits of wine, beat 2 ounces of soft soap in the mortar till it becomes a complete froth; add ½ pint of water as slow as you can, at the same time keep beating it. Mix all together; add 1 pint of spirits of turpentine. Shake it well together.

Sir William Hooker in his last report of Kew Gardens, gives the following figures of the number of visitors, which has gradually increased from 9,174 in 1841, to 361,978 in 1857, and he notes improved conduct and general good behaviour, the only return asked for the great privilege of inspection. When you in America have no president-making to do, perhaps you will turn your attention to benefiting the public by an economic museum. Of the one at Kew Sir William says: "The old museum contains glazed cabinets measuring 6,000 superficial feet. One has only to see the immense numbers of people, from the prince to the peasant, who visit

these collections, and to be told that almost every day application is made for information respecting some part or other of them, the woods, the fibres, the drugs, the dyes, &c., to appreciate the practical utility of these museums. During the past year, the important series of specimens obtained by gift and purchase from the 'Exposition Universelle' at Paris, and the valuable donations of the Commissioners for the 'Great Exhibition' in 1851, have been received and deposited in their proper places."

A new nursery for the supply of trees to the metropolitan parks, has been formed at Kew. The demand was so great that suitable kinds could not be procured in the market; about 10,000 trees have thus been supplied.

A machine-making firm in Surrey have brought out a "blast-drill," over which agriculturists ought to chant praises, because turnip-growing is to become therewith a matter of absolute certainty, seeing that it makes short work with the fly. Drawn up and down a field, it dusts the young leaves of the turnip plants with a mixture of lime and soot, not on one side only, but on both sides; and while the fans are performing this salutary operation, they create a strong indraught, which sucks in and annihilates the fly. What will the entomologists say?

Reports respecting the *Dioscorea* continue to come in favorable to the cultivation of that root; some weighing more than four pounds have been exhibited, and a general feeling in its favor seems to be abroad.

The new French strawberries are: Comte de Paris, Marquise de Latour Maubourg, Princesse Royale, Cremona, (not perpetual, as stated by some,) Bell de Paris, Gelineau, La Chalonaise, Prince Imperial. Belgian: Excellente, Ne Plus Ultra, La Reine, a white sort distinct from the Bicton Pine, and of finer flavor; Triomphe de Liege, La Delicieuse, La Constanté, (new.)

An Alpine Strawberry is known here without runners—red and white. They make beautiful borders or edges in a kitchen garden, and fruit throughout the season: and a seedling from Sir Harry, also without runners, producing large fruit, which will of course be difficult to propagate, but must finally prove an acquisition.

Strawberry wine is strongly advocated; it is said to be superior to currant, and a pleasant, cooling drink may also be made by pouring boiling water on the fruit, with the addition of a little sugar and lemon juice.

Some fine Black Hamburg grapes grown out of doors, were lately exhibited, decidedly the best examples yet shown. They were stated to have been grown on a border of the following description: the natural soil to the depth of two feet six inches, was trenched out, and refilled with brickbats and old mortar, on the top of which were laid turfs, cut rather thick, with the grass downwards. This makes a good foundation for the roots, and keeps the loose soil from running into the sub-drainage. On the top of this, eighteen inches of well-decayed dung and decayed vegetable earth, in equal proportions. The vines are stated to be vigorous and healthy, and free from mildew, &c. These were also reported to have been grown on Hoare's principle, the fundamental part of which is identical with that upon which the *Raspberry* is cultivated,—namely, inducing the plant *each year* to produce new branches from the base; these bear a crop in the second year, proportioned to the strength of the main tree, and are afterwards cut away. This is a general rule, which may be applied to all trees and shrubs,—roses, for instance,—whose energy in blossoming depends on the strength of their previous year's wood.

The *Calceolaria*, so long a favorite florists' flower here, seems to be giving up the ghost. The gardeners say it is unfortunate, but it seems nevertheless true, that *Calceolarias* are becoming less useful than they were a few years ago, as ornaments to the flower garden. On all sides there is an outcry against them. Whole beds of them die off, or become so broken and gapped by plants dying out, as to disfigure the whole arrangement of which they were a part. It is difficult to account for this.

A discussion of interest to agriculturists is being carried on regarding the course to be pursued with exhausted land, some of which has been tilled ever since the Roman occupation.

Mr. Mechi, some think, grows his wheat at too great a cost. When the inclosure of fresh land is exhausted, then begins the real struggle for improving our resources upon the acreage that *we have*. The question is not, as simply stated, "how to grow two blades of corn where but one grew before," but how to grow them at *less cost*. There is hardly a farmer now who does not know that the second blade may be bought too dear; that the essence of improvement in any and in every branch of industry, manufacturing or agricultural, lies not in the bare problem of increased production, but in that relatively with diminished cost. And is not *this* the pressing problem *now*?

We have at South Kensington what is called a "Food Museum," in which everything eatable from all nations is exhibited. A large addition has been made by a remittance of Chinese edibles from China, forwarded by Sir John Bowring. They consist of specimens of tea, preserves, sharks' fins, and birds' nests, and cases of prepared meats for soups, conspicuous among which are some suspicious looking legs and arms that make one think of kittens and puppies, but they prove to be antelope legs! The wines are numerous, ale made from rice and flavored with the flowers used for the same purpose in preparing tea. Tobacco in many forms is abundant; one parcel is labelled "mild, for women." Everything finds its way to London.

The power of straw as a conductor of electricity has been utilized in France by employing it for conductors or lighting rods. Experiments show that an electrical shock sufficiently powerful to kill an ox may be discharged by a single straw! As ever, yours, HORTULANUS.

DEAR HORTICULTURIST:—You may have thought me very severe in my first letter from this metropolis of politics, and to tell the truth I did feel indignant at some things that my eye lighted on. Great sums have been expended on architecture here, and great amounts have no doubt been jobbed and wasted, but there is something to show, and I am not a little proud of my townsman's skill in erecting the new capitol buildings. Mr. Thomas U. Walter is one of the fortunate individuals who in this and the Girard College has made his mark. But what I want to arrive at is, the sad discrepancy of things around. What would *you* say if you saw a stately mansion costing a fortune, erected in the midst of a brick yard, and occupied by the owner, without a tree planted or an enclosed garden? You would smile, no doubt; and if there is a similitude in the erection of a capitol costing a nation's fortune almost, and a building for an institute to disseminate knowledge among men, with neither of them surrounded by as much civilization as you find at a gentleman's country seat, you would at least *wonder* and inquire the reason. You would find assembled at Washington all sorts of people, except tree lovers and admirers of lawns; you would ascertain that the place is governed as Cuba is, by a succession of masters, who stay too short a time to do any good to the public grounds, and who if they did it would have the mortification of finding it undone by their successors.

What we now want is a governor like Tacon, at Havana; he made great improvements in drives and avenues, which will redound to his honor as long as they last. At Washington we want an enthusiastic Tacon, and we don't care whether he fills the presidential chair or an inferior office; if he has the enthusiasm, he can gather around him sufficient taste to accomplish the simple business of keeping the grounds, after they are planted in proper order. Why, your friends would undertake the work without charge beyond a dollar or two a day! I venture to assert that the nurserymen, gardeners, and amateurs of the United States would agree to furnish ornamental trees for the whole job, gratuitously; aye! and a friend to plant them too, if necessary, in order that we might have a national example of what public grounds should be. But this would scarcely be accepted. Everything here is done by *appropriations*, and it just so happens when a thousand or two dollars only are wanted, every man in Congress has got so stingy of the public means, that though they vote books and postage stamps to themselves, there is no chance of getting a Cedar of Lebanon placed where the ash-heaps stare at the intruder, or a group of Portugal Laurels, here and there, in a climate in which they are perfectly hardy. A magnificent *Magnolia grandiflora* is standing in the garden of the venerable

and able Peter Force, Esq., to show what might be done by a proper selection of trees, but there it is unobserved and unappreciated, while marble walls and fine ceilings costing millions, are built to hold the rattle-traps of rejected inventions. A well-balanced mind would shave off a hundred dollars from some nonsensical ornamentation to give a civilizing effect out of doors, if it could accomplish it in no other way. But there are other modes of doing it; if nothing better offers, let us recruit an army of gardeners and nurserymen, march down to Washington and storm it; let us pitch the useless public documents into a paper mill, and use the proceeds to pay a laborer a dollar a day to plant and mow the public grounds! What say you?

Washington, D. C.

J. J. S.

A FEW MORE WORDS ON PEAR CULTURE.—In manifesting his intention of "setting me over on his side of the question," my friend Mr. Allen has made one or two remarks which seem to require a reply from me, as he is evidently laboring under an impression which is quite erroneous. I cannot controvert his statement that he "never saw trees better cultivated," but when he asserts that "they could not be better cultivated," I must take the liberty of assuring him of his great mistake. The greater part of them have stood among vegetable crops and received the same culture that the crops themselves did; a few have been surrounded by grass, and experienced nothing better than an annual spading, with an occasional application of manure; rarely has a tree received any especial culture or attention unless out of condition and evidently requiring it.

The "number of trees now living," which Mr. A. desires to know, I cannot at this moment precisely state; it is probably a little less than three hundred. The last season, notwithstanding the great dearth of fruits, the small proportion of trees which *did* bear, produced a sufficient quantity to enable us to dispose of several barrels, at prices varying from three to six dollars per bushel, besides the considerable quantity required for home consumption.

My plan of intermixing dwarfs with standards, which Mr. A. interprets "as he understands it," I will explain. My idea was, that the dwarfs should be removed and replanted, not left "to die out;" and that when the standards had attained full size, each alternate one, having borne sufficient fruit to justify the sacrifice, might be cut out, which would leave intervals of "twenty-five or thirty feet." In this manner, I think, the ground would be most economically occupied.

I am surprised that Mr. A. should at this day express the opinion that any sort of quince is equally suitable for a stock, in the face of all the experiments which have proved the direct contrary. "A quince is a quince," undoubtedly, and so is an evergreen an evergreen, yet no one would hold, on that ground, that the live oak and hemlock are equally adapted for ship timber.

JNO. B. EATON.

ROSES.—DEAR SIR:—The "Vicomtesse de Cazes" is certainly a most magnificent rose, and almost constant in bloom. It does well planted out in the summer, and the best protection you can give *any* rose in the winter is simply to throw a cedar bush upon it, and cut the young wood down in the fall; you may depend that is the great secret of preserving tender roses in the winter: and the best soil you can grow roses in is a strong rich *loam*. Roses will not do any good in a light soil, rest assured; for an experience of twenty years has proved to me (after many experiments) that roses will grow better in rich virgin clay, than in a garden that has been under cultivation. The best plan for you to do would be to dig a hole, say two feet, or eighteen inches square, or round, as suits best; get some *sod*, cut thin, from an *old common*, and mix it about *one-half* or *one-third* with rotten cow-manure, without sand, and my word for it your roses will grow and bloom, and fully repay you for any extra trouble. Many of our gardeners here (and most persons) wonder how it is I have such splendid blooms upon my roses, and the only remark I make to them is that they don't get the right kind of soil for them. I always have *two large heaps* ready for use, and I have never used a pound of *peat* since I have been in the business, and I could show some of as well grown plants (that gardeners in general think won't grow without *peat*) as you would wish to see. I shall say no more upon that sub-

ject, as you will think me an *egotist*; but some people think me crazy upon *roses*. They are my favorites.

Yours truly,

G. P.

Columbus, Georgia.

So far as the winters are concerned, I prefer our own to those of the North. Should those wings which you solicit as a bird of passage ever come to you, I think you will find many a pleasant resting-place familiar with your labors, even in this exclusive kingdom of old king cotton.

I think I could show you even now a sight which in its native grace transcends the highest effort of foreign horticulture. I have introduced the Yellow Jasmines very freely into my lawns, training them in *masses* on low trellises. The effect at this present moment is indescribable. A "Geyser," with emerald waters and golden spray, is the nearest I can come to it. Not a cataract, but a softly falling fountain of blossoms. The buds and blossoms could, I am sure, be counted by millions, and all Paris could not change their arrangement for the better.

Time would fail me to tell you of all the verdure and fragrance which are now heralding the spring with us.

Pears from New Jersey, set out last fall, are in bloom. Peaches, ditto. *Prunus Chicasa* loading the air with fragrance. Gardens under full headway. *Woschitoes*, ditto!

By all means keep up the pear-fight! We *must* raise them if only for the excitement. I am much pleased with Field's book. Sorry that Mr. Allen should rub him so hard; but let the truth prevail. Among so much *humbug* a mere mistake is a refreshment, and a naked truth beyond all price.

Good luck to Mr. Allen who writes and the *Horticulturist* that prints the truth as they see it!
Columbus Co., Georgia, Feb. 19, 1859.

MR. EDITOR:—Will you ask your learned readers "Why spring is the most dangerous season to walk abroad?" If they cannot tell, just give the following good and sufficient reasons:

Because the brooks are all *brawling*, the leaves are all *shooting*, and the *bull-rush-is in the meadow*!

P. S.—Why is the sewing machine the greatest invention of the age? Because it saves all needles (s) trouble!

M.

FOURTH MASSACHUSETTS LEGISLATIVE AGRICULTURAL MEETING.

[Reported by John C. Moore, for the N. E. Farmer.]

The meeting of this Society in Representatives' Hall, last Monday evening, was well attended. Hon. Marshall P. Wilder was called to the chair.

The subject for discussion was,—"*Fruits, and the Culture of Fruit Trees.*"

The Chairman said it gave him great pleasure to make a few remarks on the subject of discussion, which was one of the most important that could be debated. Fruits, as articles of market value, were among the most important products of the farm, and as much so to the country as to the commonwealth. Their cultivation had made great progress among us within the past fifty years. The crop in this State in 1845 was valued at \$700,000. In 1855 its value was \$1,300,000. In 1860 it could not be less than two millions of dollars—more than the value of the wheat, oats, rye and barley in the State. Such had been the results of pomological science in Massachusetts, that her exhibitions sustained the highest rank. One gentleman, who had had opportunity of judging, said that he saw more choice fruit at one of our exhibitions here than he saw at twenty in Europe; where, as in Germany, the greatest encouragement had been given to pomology by the government. But great as was our credit here, it was eclipsed by that of California and Oregon Territory, correspondence from which regions showed that they were blessed with wonderful natural facilities for the growth of fruits of all kinds. Col. Wilder read a letter from a correspondent at Munroe, Oregon, stating that he had forwarded a box containing an apple forty ounces in weight, and twelve others averaging a pound and a half each! Another correspondent from the same region informed him that ten millions of nursery trees had been sold in Willmet Valley; and Col. W. added that at Washington, a few days ago, he saw a pear from that place which weighed four pounds! Grapes, when their value was considered, either as an article of luxury or commerce, had important claims on our attention in respect to the best sorts to cultivate, and best modes of cultivating them. The pear crop in this State was valued at \$100,000 per annum, and also demanded a full share of attention, with respect to kinds best suited to our soil, and to the most approved manner of

cultivation. We had among us many varieties of pears adapted to our climate and soil, and of these varieties the Bartlett, Vicar of Winkfield, and others which he named, were well adapted.

The following were recommended as the *six* best varieties of apples:—the Williams, Early Bough, Gravenstein, Fameuse, Hubbardston Nonsuch, and the Baldwin; and if *twelve* varieties were desired, the Red Astracan, Rhode Island Greening, Ladies' Sweet, Porter and Talman Sweet might be added.

For pears the following were recommended:

Best six pears on their own roots—Bartlett, Urbaniste, Vicar of Winkfield, Buffum, Beurre d'Anjou, and Lawrence.

For the best twelve, add—Rostiezer, Merriam, Doyenne Boussock, Belle Lucrative, Flemish Beauty and Onondaga.

Best six on quince roots—Louise bonne de Jersey, Urbaniste, Duchess d'Angouleme, Vicar of Winkfield, Beurre d'Anjou, and Glout Morceau.

With regard to the conditions of proper cultivation of fruits, no great success could ever attend the labor of producing them unless it was conducted with a care equal or superior to what was spent on any other kind of production. One of the primary and most essential conditions had proved itself to be thorough draining, as through its operation the more troublesome diseases and parasitical affections were obviated. This thorough drainage, Col. Wilder insisted, was an absolute associate of success. He then made a few remarks on the great necessity of keeping the soils of orchards in a rich condition, by manuring, and of planting the various descriptions of trees in the soils best suited to them. He repudiated the fashion of adopting too many foreign trees; for, as a general principle, trees and plants flourished better on the soil of their origin than they did in localities foreign to them. Col. W. recommended raising seedlings, as on them we would ultimately have our surest dependence for good reliable fruit trees. We had doubtlessly a number of fine fruits already native to the soil—at the head of which stood the Baldwin apple, of which 50,000 *barrels* were last fall exported from this city. At a late meeting at Rochester, N. Y., the Baldwin had two marks of merit to one for any other kind, and the others which received the next highest commendations were the Rhode Island Greening, the Russet, and the Tompkins County King. Col. Wilder went on to give the statistics of apple and peach culture in the West and South, showing that it was much more extensive than was generally believed. He concluded by saying that he hailed with pleasure the wide-spread interest now manifested in relation to the cultivation of the grape. The time, he said, was within the recollection of some present, when the Catawba and the Isabella were first brought into notice. Hundreds of cultivators were now raising seedlings, and the day would soon come when our markets would vie with those of Italy, Sicily, and other grape-growing countries, where this luscious fruit is not only a luxury to the opulent, but the food of the humblest peasant. Our native wines were attracting attention in Europe, and at a late convention in Belgium, our Catawba was pronounced superior to the best varieties of Rhine wine. Our own Concord grape, also, had attained great estimation among wine-growers. We have been compelled to give merely the substance of Col. Wilder's remarks.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting for March was held on the 15th; the display of flowers and flowering plants was remarkably fine for the season, and, compared with former exhibitions, gave decided evidence of improvement in the quality of the articles contributed.

We are indebted to the Secretary for a full report of the meeting, which was too late for insertion in this number.

We append the following abridgment:

In collections of plants, those from the garden of Dr. Rush contained fine specimens of *Begonia manicata*, *Bletia Tankervillea*, *Centradenia florabunda*, *Francisea eximia*, and several choice *Azaleas*. James Dundas sent a fine *Eriostemon nerifolia*, also beautifully-flowered plants of *Begonia Sandersii*, *Ryncospermum jasminoides*, *Chorozeua Lawrenceana*, and *Mahevinia Oderatissima*. A choice display of *Azaleas* from the same contributor, contains among others, fine plants of *Ivergana*, *Extreamii*, *Criterion*, *Trotteriana*, and *Duke of Wellington*.

Peter McKenzie exhibited a large number of plants; in this list we observe several new *Acacias*, *Ardisias*, *Camellias*, &c. D. R. King also contributed plants in flower, basket of cut flowers, and a "funeral chaplet of unique and appropriate design." In the articles sent by Thomas Meehan, an assortment of 40 varieties of *Hyacinths*, attracted much notice.

John Auspach, B. P. Hutchinson, A. J. Bucknor, John Gray, J. Habermehl, Robert Buist, and Robert Kilvington, also contributed largely in plants and flowers. The collections of *camellias* are noticed as being particularly fine.

Mushrooms and cucumbers of extra size, from the Rev. J. M. Richards and A. J. Bucknor. Lettuce from John Gray and James Jones, and cucumbers and asparagus from C. F. Abbot, are also enumerated. We regret our inability to publish the report in full.



MARKET PROLIFIC

TO WHOLESALE

AND RETAIL

Life in the Country Railroad Cars.

"No man in the steamboat or railroad cars had the slightest appearance of travelling for pleasure's sake."—*Grattan's Civilized America*.



AND no one can be found who does not acknowledge the benefits and conveniences of railroads, which are spread like a net over so vast an extent of our country, and which convey us in twenty-four hours literally from one climate to another. There is, however, a growing notion that railway directors are far from consulting the interests they represent, in such a manner as to make the most for the stockholders, and at the same time to make the traveller the most comfortable. It may be set down now as a fixed fact, that *nobody ventures on a journey of any length, except in summer, if he can avoid it.*

It is considered a positive nuisance to travel, by the great majority of persons who have a good home. Now, we say, that if this could be converted into a positive pleasure, the number who travel would be so greatly increased that a large part of the present financial difficulties of the roads would vanish. How to do this is the question.

Let us see. A journey from New York or Philadelphia to Chicago is to be endured: the distance is, say 850 miles, more or less, and two nights are to be consumed,—or we must lie by and lose that much time. Most people make up their minds to get through with it; all may be said to endure at least one night of travel in going or returning. What do they see, and how are they treated?

A couch car is provided at night on some of the routes of which we shall speak further; many who have paid for this indulgence cheerfully, find it too noisome for repetition, and if it were entirely desirable, there is not room enough for all. Those who remain in their seats are subjected to the presence all night of dirty passengers and their children; to the admission at every station of way passengers; to the spitting of Americans; to the overheating of the stove; to the imperfect or excessive ventilation; to being waked many times to "show your ticket," and that generally just as you have succeeded with difficulty in composing yourself. There are other causes of personal inconvenience; but let us ask, Why, while we are being whirled at this rapidly convenient gait, we should be compelled to suffer an amount of inconvenience and danger to health that our domestic animals, if long exposed to, would die under? here we allude to the heat and ventilation. A man or boy, who knows no more of thermometrical variations than he does of the belt of Saturn, is employed by the month to "make the fires in the cars,"—and generally, we must say, he earns his money by attentively piling in wood whenever the stove is empty; but he makes no difference between a warm and a cold night, a moderately cool or a hot day;—how should he know? the conductor is often a perfectly indifferent passenger, who amuses himself, between his frequent demand for tickets, with the travelling post-master, in the smoking-car, (advertised, but not always to be found—and when found, too often disgracefully dirty), or nods at his post in a small room now often provided for that purpose. So the

passengers are allowed to take care of themselves, the fireman only appearing at intervals sufficiently distinct to keep a furious fire ; or, if not watched, he lets it go entirely out.

The infirm passenger, or the delicate lady, who has been accustomed to comfort at home, consult their feelings by taking such seats as they consider to be most desirable, securing, if not too late, a window of their own. An emigrant woman who can afford to pay the full price, seats herself, with three or four fledglings not in the best trim, before our travellers, or mayhap along side. Soon at a way station, a countryman, with boots muddled to the very knees, brushes by,—and half a dozen local people who are going to the next station, redolent of tobacco and mud, hoist or lower windows before and behind you, and if you remonstrate declare their *right* to do as they please. Thus you are roasted at one moment and frozen at the next ; you have no control whatever of the ventilation of a seat that you have paid for all that was asked. The reader who has travelled for two or three successive nights will add a dozen more annoyances, such as the mud into which you are sometimes landed ; the very shocking meals you are compelled to partake of or starve ; the black coal dust that penetrates every portion of your person and in half an hour defiles you all over ; the dust (less annoying however in winter than in summer), and not least, the ever-recurring ticket-seer.

Now all this is wrong ; nearly everything we have named can be remedied by a very simple process ; the ticket-taker shall never intrude upon you ; the countryman, returning from selling veal at the town you stop at, shall not intrude himself on the seat of the through passenger or delicate lady ; none but yourself or your chosen companions shall let down a window on your neck ; no dirty boots shall be admitted to rub your delicate dress ; no man redolent of a bar-room shall snore in your ear, and you shall have a temperature so equable that even your favorite horse might endure a night in it. Shall we go on any longer without attempting an improvement ? shall thousands nightly run the risk of consumption and pneumonia, or shall we be comfortable, and decrease the amount of the bills of mortality ? Let us see.

The couch-car is a step in advancing comfort, but it is open to serious objection, the first of which is the ventilation ; the persons near the door, or ventilator, get too much of the outward air, while those beyond get too little. The space is cramped, the bed hard, or otherwise uncomfortable, and the pounding you get is multiplied by the increase of surface exposed to it while in a recumbent posture ; and at all events you will find plenty in the morning who have not “ slept a wink.” They will also soon be infested with insects. The inventors, who are allowed to run these cars at their own cost and risk, and charge half a dollar for the night, do all in their power to make the best of it, but it is an imperfect substitute for the poor benches ; we want and must have a better.

The French Coupé, now in use all over Europe, is what is wanted. It is a single room with four seats, a door on each side, which may be hired for the trip by one, two, three, or four individuals, for a small charge additional to the regular ticket. The seats are all capitally stuffed, with a projection from the back to lean the head on ; and this is a most comfortable mode of sleeping ; at your feet is a copper tube of sufficient size, pushed in from the outside, and filled when requested with hot water. Here you may really

rest for days and nights in succession, free from every annoyance we have named, regulating your own ventilation, eating your own provision, drinking your own wine, or milk, or cream, and conversing with those with whom you have planned your journey, or have invited from the cars to share your luxury and comfort.

Is it not astonishing that this convenience has to be named, after railways have been so long an institution among us? We are confident that the couch-car inventors would make double the money they now do, with half the trouble, by introducing the Coupé; and we appeal to the directors of our respectable routes to make one effort more to accommodate the sick, the delicate, the fastidious, and the old. Their profits are greatly concerned in this matter, and those who leave the comforts of home will travel thrice where they now go but once, and be thankful for an introduction to a new branch, if we may so call it, of "rural art."

Knowledge is "slow to travel," but no people on the earth are more sure to carry out a good plan than our own, when once it is shown to be valuable. We look upon the present system of travelling (next to the speculation of public plunderers, and the foolish telegraphic matter* of our daily press, which doses us daily with murders and runaway wives), as one of the greatest and yet most easily corrected evils existing in "free America." We have got to be so entirely "free," that every fellow-traveller may dash cold air on you as often as he pleases; the next step must be a reform, or he will apply cold water (instead of tobacco juice) in the same manner.

THE USEFUL AND THE BEAUTIFUL, IN GARDENING.

BY THE REV. A. D. GRIDLEY, CLINTON, NEW YORK.

It is not always easy rightly to adjust the claims of use and beauty. Tastes differ, and circumstances alter cases. Most men, however, are utilitarian in their views and feelings. Must we not eat and drink and sleep, they inquire, and can anything be better than stocks and mortgages, and instruments that are sure to pay? This is the governing principle. This speeds the plough, drives railway-trains, makes steamboat paddles revolve, the looms of factories rattle, and is the grand motor of that mighty and universal machine which men call "business." It is to gain physical enjoyment and material prosperity.

The same principle steals into our gardens. We plant and prune and water and weed, chiefly with an eye on the market. Beets and onions and strawberries and radishes fetch so much solid cash; and peas, peaches, pumpkins, pears, cabbages, grapes and squashes command so much. They are all likewise good to eat. Out with the useless flowers! They cumber the ground; and the time wasted in cultivating and admiring them might be spent in raising fruits and vegetables. Throw them over the fence! These amateurs, who give so much of their land and of their thoughts to fancy gardening, are visionary characters, who don't know what is really worth having, and are seen to come to want in the end.

Has not the reader heard words like these? The grounds of my friend

* A would-be Sydney Smith says, with some terseness, that "we know everything in America before it happens, and when it happens it ain't true!"

are about equally divided between the useful and ornamental. His lawn contains fine specimens of the Norway Spruce, Hemlock, European Linden, Larch, Dutch Elm, and other trees on which the eye of cultivated taste always loves to repose ; and yet, we have heard many men wonder why that lawn was not planted with cherry-trees, pear-trees, plum-trees, and other useful things. One man, in walking through it, paused by a group of Altheas, Euonymus and flowering Hawthorns, and asked what sort of fruit these bushes bore ; and learning that they were ornamental shrubs, his countenance fell, and he could not repress his amazement and disgust. When he was taken to the rear of the premises, and shown the fruit trees and vegetables, he began to breathe more freely. His eyes brightened over the rows of carrots, and early potatoes, and he could not help saying, as he rubbed his hands together, " Now this looks like living ; here is something to keep one from starving."

So much for a specimen. Now we pity, more than we despise, this material spirit. It robs its possessors of high enjoyment. They ought to know that money-making and physical gratification are not the chief end of man. Is a tree worth nothing save for bearing fruit or making lumber ? A stream, except for turning a wheel ? A cloud, save as it waters one's potato-patch ? A flower, save as it belongs to a pumpkin-vine ? If the æsthetic part of our nature is not to be gratified, why has God endowed us with it, and why has He adapted the world we live in to this part of our constitution ? Alas for the man who cannot see the beautiful side of nature, or who disparages those who strive to do so !

" A river or a sea,
Is to him a dish of tea,
And a kingdom, bread and butter."

Apply this thought to the pursuits of horticulture. We would not speak lightly of gardening as carried on for pecuniary profit. If it were possible, we would deter no one from devoting a suitable portion of his ground to fruits and vegetables. Our bodies must be fed, as well as our tastes gratified. And, moreover, one finds greater enjoyment in the beautiful itself, when the useful also is allowed a proper share of his attention. A well arranged garden will always show a due regard to each. What that due estimate is, it may not be easy to determine with great exactness. It will vary with each person's means, and the size of his premises. Nor can we always draw a distinct line between the useful and the ornamental. In fruit culture, for instance, there is an incidental appeal to the sense of beauty, as well as a direct one to that of pecuniary profit ; strawberries, cherries, apples, pears, grapes—do not these please the eye, as well as tickle the palate, and fill the pocket ? Few persons, it may be, cultivate fruit for its beauty ; yet we would by no means see it excluded from our grounds, nor would we fail to give the homely kitchen garden its due appreciation.

Having now guarded our orthodoxy, let us say a few heretical words. Fruit trees are well enough, and should be planted ; but they are, after all, the least important part of an amateur's plantation. How long are many of them in coming into bearing, and for how small a portion of the year, at best, do they afford gratification ! To what innumerable ills are they subject ! Slugs, aphides, borers, worms, curculios, caterpillars, mildew, sap-blight, black-knot, cracking of the fruit, bursting of the bark, etc., etc.—what an array of obstacles, what a multitude of disappointments ! And if

it so happens, that after one has spent many years in planting and nursing, his patient labor is about being rewarded by a specimen of new and choice fruit, how often do thieves snatch the dainty morsel from his very lips.

But suppose (and the supposition is well warranted), that when we planted our fruit garden, and arranged our vegetable quarters in the best manner, we at the same time laid off a suitable portion of ground for ornamental purposes. It was graded; roads and walks were laid out through it; it was sown with a mixture of veritable grains, and in all respects was moulded into a complete lawn. A variety of ornamental trees were set out upon it, according to the canons of correct taste. Being well cared for, they grew luxuriantly from year to year, and are now large, symmetrical trees. The velvet grass has afforded us annually a summer-long feast of pleasure. The elm has assumed that majestic, yet graceful post, which makes it the "Queen Elizabeth" among trees. The magnolias and tulip-trees, with their broad, glossy leaves have diffused the air of milder climates through our northern garden. Linden, oak, chestnut, maple, beech, birch and ash, both natives and foreigners, have grown side by side, and mingled their spray in loving companionship. Here, too, we planted evergreens of various forms and shades of color; and not only the robust denizens of our American hills, but many from across the water. Scotland and Austria sent us pines, and so did Switzerland and the Isle of Corsica, and Siberia and the Bhotan mountains. Norway contributed the noblest of all the spruces; the Altai mountains a Fir, Siberia and China sent Arbor Vitæ, Sweden a Juniper, and England a Yew. Other nations sent us representatives, which have not yet become so well domesticated as to call for a mention of their names.

And here we might adduce the case of our friend, Professor —, who is infatuated with the same disregard of pecuniary profit in his gardening. On one side of his lawn the ground falls off into a ravine, which winds down into a wild gulf or chasm, where a dashing stream and scattered rocks and overhanging boughs diffuse the charm of picturesque beauty. The sunny slopes of this ravine might have grown excellent grapes, pears, berries, currants, and the like, but he has devoted the ground to less profitable purposes. He has laid out gravelled walks, winding through its centre and along its sides. Here and there he has made patches for flowers. All the curious trees, shrubs, vines and plants that he could get, far and near, are gathered into this spot. He has traversed the surrounding forests and swamps, and woo'd away their choicest treasures to set them here. He has taken advantage of a little spring which trickles out from the side of this ravine, and has led its waters along by the roots of certain shrubs and plants which love such conditions. Now this ravine does not yield him a mouthful to eat or to sell, yet he and his family think it is the best part of their garden, and his visitors (whose eyes are not in their stomachs or their pockets), think so too.

But to return. We spoke of some of the discouragements attending fruit culture. But the curculio, sap-blight, slug, borer, and black-knot, do not infest our ornamental grounds. We have not been compelled to wait many years before our trees and plants afforded us gratification: even in the second summer after planting, many of them assumed those peculiarities of form and foliage which recommend them to the eye of taste. Nor is it a slight consideration that our evergreen trees and shrubs are nearly as beau-

tiful in winter as in summer, and so make our grounds cheerful and warm throughout the year. And who ever heard of thieves plundering ornamental trees and plants? Their taste runs in the line of peaches, pears, and melons. For many years have we planted lindens, magnolias, junipers, Japan lilies and geraniums, without any fear that prowling ragamuffins would break through our hedges and steal them.

And who can estimate the value of the associations connected with such trees and plants! These associations whisper in every leaf, they exhale from every flower, they nestle in the shady branches above our heads, they rise up from the walks beneath our feet. As we traverse our shaded avenues, other men and other times surround us. The patriarch meets us under "the dark, gnarled, centennial tree" he so much loved. Sages discourse philosophy under the revolving shade of our plane-trees. Orators and poets sweep past us in their robes, meditating themes of eloquence and song. The great and good, the pure and the beautiful of every age and clime, are here, and repeat before us the words and actions of their daily lives. We hear "the voice of the Lord walking in the garden," reminding us of his continual presence and fatherly care. We find a new charm added to domestic and social life, a charm which grows stronger with every passing year, and makes home the full realization of its sacred name.

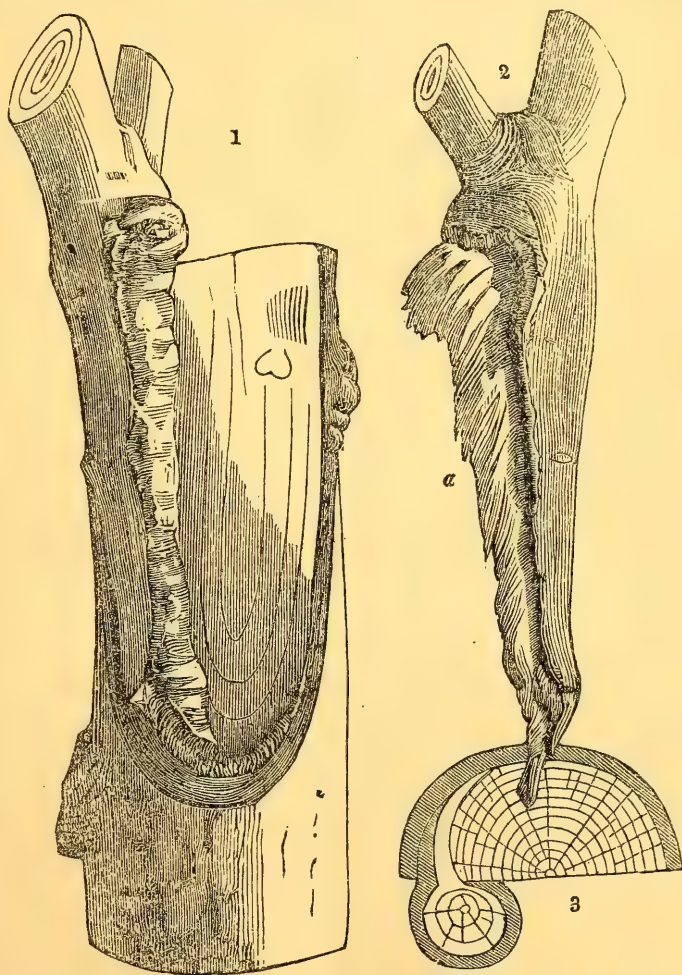
But we need not pursue this thought further. There is little danger that ornamental gardening will anywhere lead to the neglect of gardening for profit. Man loves to make money and to eat, too well, for one to indulge fears on that score. And we sincerely hope that the practical will maintain its due share of the garden. But we also hope that ornamental planters will never apologise for their tastes, that the pleasure-grounds of our country will become larger instead of smaller, and that those men who now see no value in anything which does not bear fruit, may soon come to a better mind.

BAD GRAFTING.—HOW WOOD IS FORMED.

WHILE examining lately some examples of bad grafting, we met with the following remarkable case, which will be regarded with no small interest by those who are desirous of learning HOW WOOD IS REALLY FORMED. A small scion of an apple had been whip-grafted upon one side of the cut of a much larger stock, as is shown in the annexed figure, 1. It had apparently formed as strong a union as is usually found in such cases, but upon applying a little lateral pressure the scion came away, as at 2, bringing with it a considerable quantity of young wood, 2 *a*. Upon a more minute examination it was found that this wood had been insinuated between the bark and wood of the stock as at 3, the wood of the scion having remained quite independent of that upon which it was moulded; it had moreover divided into very fine descending fibres, the broken points of which are shown at 2 *a*. In other words, the scion had formed a woody sheath of its own, which covered over the wood of the stock and was independent of it.

How is this to be explained? Those who believe with Gaudichaud, Dupetit Thouars, and others of their school, will accept the specimen as a new proof of the accuracy of their views, that wood really descends from above in the form of fully organized tissue. On the other hand, those who adopt

the more common opinion that wood is organized where it is found by organizable matter passing downwards, will see here a confirmation of their theory ; while the physiologists who maintain that wood is a mere secretion from the surface of old bark or old wood will, it is to be hoped, admit that such a specimen as this is inexplicable upon their interpretation. It is ob-



vious, indeed, that the new wood 2 *a* is really derived in either a solid or liquid form from the two branches at 2.

This is much the same as the case of a Willow which formed a sheath of wood several feet long over dead wood, and beneath dead bark, where any superficial deposit was obviously impossible. Or it may perhaps be better compared to the celebrated example of a Rose Acacia mentioned by the late Prof. Achille Richard. The Rose Acacia had been grafted on the common

Pseudacacia. The stock had died ; but the scion had continued to grow, and had emitted from its base a kind of plaster composed of very distinct fibres, which surrounded the extremity of the stock to some distance, forming a sheath, and thus showed incontestably that wood descends from the base of a scion to overlay the stock.

That being demonstrated, it becomes the more difficult to understand how it is that although the wood of a stock is derived from the scion, yet the branches which sprout from that wood are not like those of the scion but of the stock. In other words A (the scion) under its new condition of life does not produce A, but B (the stock).

The true explanation of this puzzling phenomenon is, doubtless, that in our common trees there are two distinct systems of organization, simultaneous in their appearance, coëxistent and coëval, but independent ; the one longitudinal, which is what passes downwards, and the other horizontal ; that the first is incapable of producing new roots, and is to be regarded as a mere provision for conveying sap, and for giving strength to a tree ; that the latter alone has the power of furnishing new shoots. This latter, called the medullary system, is perpetually growing outwards and fitting on its myriads of extremities to the surface of the wood beneath the bark ; so that when a branch is produced it necessarily comes from the horizontal system, derived in the beginning from the stock and not interfered with by the scion.

This is the view that was many years since taken by the writer of the present notice, and we are not aware of any attempt having been made to show its inaccuracy. Dr. Harvey, in his "Trees and their Nature" (noticed at p. 132 of the present volume) does not advert to it ; or if he does we have failed to find the place, for which we trust to be excused, seeing that life is not long enough to permit the use of books without an index.

It is not for the sake of puzzling physiological heretics, or for the sake of the orthodox that this question has been thus revived. The case before us has been fixed to our pages for the sake of the ignorant, or the ill-informed, who have not yet discovered that to remove the branches of a tree is to paralyze its wood-producing powers ; and who sally forth in mid-winter, or indeed in mid-spring, or whenever they happen to think about it, armed with saw and axe, and good brown bills, for the purpose of making a raid upon the plantations under their care. Incredible as it may seem, there are plenty of woodmen who firmly believe that few branches will furnish as much new timber as many. Let us hope that they will reflect upon our apple-tree, repent of their foolish courses, and resolve in future to follow a wiser and better practice.—*From the Gardeners' Chronicle.*

HARTFORD PROLIFIC GRAPE.*

"RAISED by Mr. Steel, of Hartford, Connecticut : Hardy, vigorous and productive." We refer to one of our best authorities, our well-informed friend Charles Downing, Esq. We agree with him in all points about this grape, excepting the thickness of skin and toughness of pulp. Either cultivation has improved the fruit, or it was better the past year than at the time

* See Frontispiece.

when Mr. Downing described it. We found it a very fine berry with a little acidity, but soft, and with a remarkably thin skin, which yields easily its deep coloring matter, and must be, on that account suited, to red wine-making. We have no doubt of this, or its very acidity (of which it has little indeed) would be a quality as a *bottom* for a good wine.

Is it not time that we do away with the spurious drugs imported and carefully labelled, and, of course, preferred by some slaves of foreign products and manners, by substituting to these poisonous substances our own pure products of the grape? We have tasted repeatedly some South Carolina wines, and have found the wine made of the Lenoir equal to very good Claret, which it resembles altogether in "*acobi*." We have no doubt either the Clinton or Beatty would be fully as good for Claret wine-making. The Isabella wine, made by our friend Mr. Caradeuc, South Carolina, has altogether a Burgundy taste and flavor, while his *Pauline* ranks between this and the Claret, and is a delicious wine. Those who have tasted the *still Catawba*, of Georgia, will no longer doubt its capability of competing with good Hock or Rhine wines; and when we consider that the first is made almost under our immediate control, and that we have nothing but *faith* and *reliance upon foreign skill* to sustain the other, we shall perhaps come to the conclusion that it is safer, although not so *stylish*, to drink our own wines, than to pay ridiculous prices for Champagne made in all parts of the world, except in *Champagne*; for Logwood, Sugar of Lead, Huckleberry juice, and two or three score more *melanges* sold under the name of cheap *table wines*,—cheap indeed! for their manufacturing costs almost nothing. Such wines the writer of this note has seen condemned by the hundred barrels in the *Entrepôt of Barcy*, and the contents poured into the Seine, to the great annoyance of the fish, and to the immense benefit of the community. But such stuff is good enough for America, and sells here as almost every foreign *humbug* does under "*a name* upon a gilt label," and nicely corked and warranted. By the by, Mr. Editor, let me ask you, "*Where* are the responsible parts of all those and other *warranters*?"

What is the means to make a spurious *warranted* article pay for its sophistication? a law suit? that would be mere folly; retaliation? that is unmanly, unchristian. The only safe way to guard against such barefaced impositions is, *abstinence*, and substitution of a better and more genuine article for articles of "doubtful import." Let us remember the good Persian maxim "when you *doubt*, abstain," and, let us apply it, not only as it was meant, to moral obligations and duties, but also to our *diet*, that fruitful source of health and diseases.—L. E. BERCKMANS.

A FEW CASUAL REMARKS ON THE IMPORTANCE OF PROPAGATING FLOWERS FROM WELL-MADE SEED.

BY WILLIAM CREED, ROCHESTER, N. Y.

Now that the season is rapidly approaching when all who are interested in Floriculture will be contemplating what selections shall be made for another year's operations, we take this opportunity of urging upon the inexperienced the importance of propagating flowers from well-made seed,

and upon which alone rests the success of the propagator. By this expression, however, we must not be understood to mean *well-matured* seed ; but, on the other hand, the adoption of the *minutiae* of details (in its saving) necessary to maintain the present standard of excellence discernible in some of our public exhibitions, as well as private collections ; and yet, perhaps, not one out of twenty of those even who pride themselves in producing good flowers, and, certainly, not one out of a hundred of the commonality of growers, ever give that attention to the subject requisite to produce satisfactory results.

Take, for instance, that familiar favorite, the Double Balsam, or its rival, the Balsamine, with its rose-like petals and diversified blossom tints ;—what an improvement is it upon the Lady Slipper !—the former may well be styled the *chef d'œuvre* of its species in cultivation, while from the latter may be traced the origin of its present excellence, and this superiority of the Balsamine happening simply through a perseverance which apparently but few take any part. The Balsam, &c., like many other specimens of the floral world, in order to prevent its running back to its primitive state, requires the seed to be ripened only on the main stem,—and all the seed-pods on side branches, as quick as they begin to set, should be picked off ; if this has not been done, the seed when propagated will bear unmistakable marks of a degenerating influence working upon it. All plants producing single or semi-double flowers should be uprooted as soon as detected.

We next bring to notice another well-merited and long-tried annual, the Ten-week Stock. This is one also requiring attention while saving seed. Depending as we do upon the single specimens of this flower for its seed, certain rules must be observed to ensure any gratifying results. For example we may say, that if the seed sown this season should prove to have an *excess* of single flowers, *throw them away* ; but if the double flowers predominate, it may be considered a good “strain,” and worthy of the following attention, viz. :—as soon as half a dozen pods have set on the centre stem, the *flowers above the pods* should be destroyed and some of the side branches should meet with the same treatment, but allowing only two or three pods to set and no more shoots to grow. Some growers, however, confine the pods to the centre stem only, and cut the side branches off close ; but experience teaches us that a few pods may be ripened satisfactorily on the strongest of the side shoots, the entire vigor of the plant being confined to a few pods of seed. With respect to color, that is a matter of choice from which the experimentist will make his own selections.

The Asters should not be overlooked ; their multiplicity of colors, as well as the great improvement accomplished by many distinguished growers, make them indispensable annual visitors. The French Pyramidal Aster, though not equal in beauty to some other varieties, nevertheless may be mentioned as being one suited to most growers, on the supposition, however, that the situation as well as soil, like those above mentioned, should be suitable to its growth and the maturity of its seed. All indifferent plants should be pulled up as early as the blossoms are seen, and none but the perfect and earliest flowers allowed to mature their seed. This variety of Aster being a profuse bloomer, all the blossoms of a secondary character on good plants should be watched and gathered from time to time, and which will prove a continual resource, when in season, for securing *bouquets* of an attractive nature, and which may be freely distributed to the admirers of

this flower, and at the same time prove a benefit to the plant in influencing and maturing the seed.

We now reluctantly conclude our remarks ; undoubtedly we are trespassing beyond the boundary mark allotted to such communications in the *Horticulturist*,—and yet, but few of the most familiar annuals have been enumerated, to serve as an illustration of some important facts which should not be overlooked by any one engaged in Floriculture, and, it is hoped, will tend to promote a more universal effort in this direction, and equal to the requirements of a progressive age. There is scarcely a flower discovered in its original state, but that it has been susceptible of improvement in some desirable point. This cannot, however, be attained without effort ; let us awaken ourselves, and follow the French, English, Germans and Prussians, who it must be admitted carry off the palm in this matter, and who apparently possess unusual elements of character to prosecute it perseveringly and successfully, and upon some of whom we almost entirely depend for our supplies of reliable seeds.

Those who have hitherto considered seed-saving hidden, as it were, in a labyrinth of mystery, so far as producing an unbroken succession of flowers of the highest character is concerned, should “try, try again,” by securing in the first instance the very best seed from the most reliable sources, and then adopt the care in experimenting necessary to the accomplishment of the desired ends. The subject is full of interest, and cases may be multiplied, almost without number, where a similar *minuteness* of treatment is required to attain satisfactory results, and which perhaps I may refer to at some future period.

ADDRESS OF JOHN JAY, ESQ.

(Continued from page 185.)

“The area of our territory, which is about three millions of square miles, will soon be treated of by Mr. Poor, the Chairman of the section on Topography. Without proposing to trench upon the duties of that section, or to do more than refer to the prominent features of our physical geography, I may remark, that the calculations of the Topographical Bureau at Washington show the existence of an interior valley drained by the waters of the Mississippi and its tributaries, nearly as large as the Atlantic and Pacific slopes together, and one-third larger than the whole domain of the Republic on the adoption of the Constitution.

“Over two-fifths of the national territory is drained by the Mississippi and its tributaries, and more than one-half is embraced in what may be called its middle region. One-fourth of its total area belongs to the Pacific, one-sixth to the Atlantic proper, one twenty-sixth to the Lakes, one-ninth to the Gulf, or one-third to the Atlantic, including the Lakes and Gulf.

“Of the entire area of the United States only about one-thirteenth part is improved ; about one-eighth more is occupied but not improved. The entire number of acres occupied is some three hundred millions, (293,560,614), or nearly one-sixth part of the national domain.

“Between the United States and France,—although the lands in both are generally held in fee simple, or nearly so,—a difference of similar importance is found in the average size of the farms.

"Here the average is from 150 to 200 acres ; there the average, although not so small as has been frequently represented, is probably but six or eight acres among four millions of the smaller proprietors, or about twelve acres to each farm throughout the entire empire ; and these are frequently encumbered by ancestral mortgages.

"This table shows us that in 1850 the four largest staples of our country, ranking them according to their annual value, were—

Indian Corn,	-	-	-	-	\$296,000,000
Hay,	-	-	-	-	138,000,000
Wheat,	-	-	-	-	90,000,000
Cotton,	-	-	-	-	78,000,000 "

Mr. Jay examines the question whether Indian Corn is strictly a plant of the New World, and arrives at the conclusion that it is so, and adds :

"Indian Corn is preëminently the great staple of the country, surpassing all others in the area of its cultivation, and in the amount and value of the crop, yielding, in 1850, within a fraction of three hundred millions of dollars, being all but equal to the united values of the three next staples in their order,—wheat, hay and cotton ; and as Indian Corn is not only the most important, but the most universal crop, extending from the northern to the southern limit of the United States, its cultivation would seem to afford a better test than that offered by any other, of the progress of American tillage.

"In the production of Indian Corn no State has retrograded. The crop in 1840 ; was nearly four hundred millions of bushels ; in 1850 it was within a fraction of six hundred millions, being a gain of 56 per cent., while the increase of the population, during the same time, was only 35 per cent. The estimated crop for 1855, according to the Secretary of the Treasury, was between seven and eight hundred millions, or nearly double the crop for 1840 and the crop for 1856 was estimated at fully eight hundred millions of bushels.

"Chicago, which, twenty years ago, imported flour and meal for her own consumption, has established brands of flour which are now recognized throughout Europe ; and she is shown by recent statistics to be the largest primary grain depot in the world, rivaling Odessa and Galatz, Dantzic and St. Petersburg, while she leads all other ports of the world also in the quantity and quality of her exports.

"The population of Chicago, which, in 1850, was 29,000, in 1856 had increased to 104,000.

"The census of New York for 1855 shows that her wheat crop, once so famous, is actually decreasing, owing, as is supposed, in part to the ravages of insects, and in part to diseases of the plant, assisted, perhaps, by a gradual deterioration of the soil.

"In no country can a bread crop be raised with less labor than Indian Corn generally throughout the United States, and it has been estimated that the same amount of toil of a man and horse which will raise a bushel of wheat in England, will raise ten bushels of corn on favorable soil in this country.

"There is about one horse to every five persons in the United States. The 500,000 asses and mules returned are almost entirely confined to the Southern States, where the climate is regarded as better adapted to this animal than the horse.

"The total value of live stock in the United States, in 1855, was about five hundred and fifty millions, and the value of animals slaughtered about one hundred and twelve millions.

"*The grain, root, and other crops, from 1840 to 1850 :*

"Rye had *decreased* from eighteen millions of bushels to fourteen millions.

"Oats had increased from one hundred and twenty-three millions to one hundred and forty-six millions.

"Potatoes (Irish and sweet) had decreased from one hundred and eight millions of bushels to one hundred and four millions.

"Cotton had increased from eight hundred millions of pounds in 1840, to nine hundred and eighty millions in 1850, and to one billion and eighty-eight millions in 1855.

"Rice from eighty millions of pounds to two hundred and fifteen millions ; while

"Tobacco has *decreased* from two hundred and nineteen millions of pounds to one hundred and ninety-nine millions.

"Wool had increased from thirty millions of pounds to fifty-two millions.

"Silk Cocoons had *decreased* from sixty-one thousand pounds to ten thousand.

"Wine had increased from one hundred and twenty-four thousand gallons to two hundred and twenty-one thousand.

"One point that should not be lost sight of in a consideration of the advantages attendant upon agricultural operations is, the safety of the capital invested, compared with the chances of loss attendant upon commercial or manufacturing investments. The Hon. Emory Washburne, of Massachusetts, in an address before the Worcester Agricultural Society, in 1854, stated some facts bearing upon the question, which a statistical inquiry, if one could be accurately made, into the successes or reverses of the various pursuits in which our countrymen engage, might probably multiply to an extent that, without proof, would hardly be credited. Of the merchants in Boston doing business at a certain wharf during forty years, only six became independent, the remainder failed or died destitute of property. Of one thousand merchants, having accounts at a principal Boston bank during the same year, only six had become independent.

"Another investigation led to the startling result, that of every hundred traders, but seven succeed in acquiring wealth. From such reverses the farmer is comparatively free. Of eleven hundred and twelve bankrupts who took the benefit of the bankrupt law in Massachusetts, only fourteen were farmers ; and of twenty-five hundred and fifty bankrupts in New York, only forty-six were farmers. Less than two per cent. of the bankrupts belonged to the agricultural population, although that population so largely exceeds all the rest of the people, however classified.

"The large harvests in our young States ought not to blind us to the fact, that the fertility of those parts of the older States which once yielded as abundantly, seems to have been steadily diminishing for a long course of years.

"This fact is exhibited, not only in the wheat lands of New England, and other parts of the North, but on the tobacco fields of Virginia, and the cotton plantations of the South ; and the subject undoubtedly deserves the most careful investigation.

"The deterioration of our soil is doubtless owing, in a great part, to a

careless system of cultivation, common to new countries where land is cheap, and labor is dear, and the soil is naturally productive, and the individual cultivator is intent upon large immediate returns, thoughtless of the permanent fertility of his farm, careless of the interests of his successors, and regardless of the prosperity of the community at large. It has been suggested that every agricultural people run the same race of exhausting culture, shallow ploughing, a continuous course of impoverishing, with neither rest, rotation, nor sufficient manure; and that necessity alone can convince them that duty and interest both demand that land shall be so tilled as to increase rather than diminish in fruitfulness. Such a necessity in the lessening crops of the Atlantic States, and westward emigration in search of more fertile territories, already presents itself to the intelligent American agriculturist: and the reasonable belief that the same exhaustive system will soon begin to tell upon the most productive regions of the West, has led to the discussion in agricultural newspapers, and at farmers' clubs, of the philosophical causes of the exhaustion, and the best means of renovation.

"In some sections of the country efforts to restore exhausted lands have been attended with the most marked pecuniary success. Mr. Ruffin, of Virginia, estimates the increased value of reclaimed lands in Eastern Virginia, by marling and liming, from 1838 to 1850, at some thirty millions of dollars.

"The committee on drainage, in their report to the State Agricultural Society of New York, in 1848, assert, that 'there is not one farm out of seventy-five in this State, but needs draining—much draining—to bring it into high cultivation. May we venture to say that every wheat field would produce a larger and finer crop if properly drained.'

"Yet another topic, closely connected with the interests of American agriculture, is the recent diminution of the proportion of the male population engaged in agricultural pursuits, as compared with the number engaged in commercial and other pursuits. * * * *

"There is reason for believing that the proportion of the population devoted to agricultural pursuits is decreasing: and it is important that the schedules of the next census should be drawn with reference to the determination of this point with entire accuracy, and should develop whatever facts may be essential to enable us to discover, and if possible to correct, the causes that may be diverting an undue proportion of American industry from the culture of the soil.

"The attractiveness of town and city life for the laboring classes may be lessened by a study of the tables of mortality, showing that the average duration of life is much larger in the rural districts.

"The feverish anxiety for rapid gains in mercantile pursuits may be advantageously checked, by statistics showing the uncertain gains of commercial speculations, and the certain profit of enlightened agricultural toil.

"After a survey of the area, the population, the products, and the statistics of our great American farm, of its home resources, its foreign markets, and its probable future, we close with the thought, that for the advancement of this great interest, which supplies millions with healthful and profitable employment, and other millions with their daily bread, canals and railroads intersect our continent, extending westward towards the far Pacific; ships whiten the ocean, and steam labors in a thousand forms. That

to supply its workmen with fitting implements, inventive genius is ever wakeful, and mechanical skill unceasingly active. That in their behalf chemistry, by the crucible and analysis, is extorting from nature her hidden secrets ; and science, in all her forms, is lending her skilful aid to perfect, in this advanced and advancing age, the art that was born with the creation, in the garden that was given to man, to dress and to keep it.

"We close with the thought, suggestive of thankfulness and good will, that all these agencies are at work for the benefit of our universal brotherhood, to lighten the primeval curse, and to compel from our common mother, for the benefit of the children of a common Father, more varied and abundant harvests, with greater certainty and with lessened toil.

"Let us also reverently remember, gentlemen, in our study of the laws of political economy by the guiding light of statistics, that the truths which we seek to discover are a part of that universal law whose seat is the bosom of God, and whose voice is the harmony of the world.

"Nor let us ever forget, in the contemplation of our unparalleled blessings, that the happiness and prosperity of a nation depends infinitely less on their material wealth, than upon the observance of those great rights and duties which our fathers solemnly recognized when we took our place in the family of nations."

Here is food for thought ; facts which no one can gainsay, and reflections which all, including the most learned statesmen, may study with advantage.

FRUIT IN FRANCE AND ENGLAND.

BY G. W. R., HARTFORD, CONN.

IN the February number of the *Horticulturist*, a correspondent of the *Leader* mentions the extravagant price which was asked for some pears at Chevet's, in the Palais Royal, Paris. He says that Madame Chevet informed him that the price for the largest was only £25, or \$125 ; quite modest. I think he must have been mistaken. On the 28th of November last, attracted by the fine display of fruit in the windows of Chevet, I stopped in and made many inquiries : there were very fine specimens of the Duchesse, of the Vicar, and many others which I did not recognize : those were selling at from one to two francs each. There was one specimen in the window, very showy and very large, weighing probably two pounds ; this likely was the pear alluded to by your correspondent ; the price was twenty-five francs, as I was told by the woman in attendance, and might have been misunderstood by him for twenty-five pounds ; twenty-five francs was enough for it, at any rate. I gave one franc for a good specimen of the old Crassane, and found it a very good pear ; at a restaurant, on another occasion, I gave a franc for two, rather smaller than the above.

Pears and apples were plenty in Paris ; in the shop windows were some very fine specimens ; there were a few apples at Chevet's of a golden color, large and ribbed, such as I never saw before. In the streets there was a great variety of inferior quality, trundled about in barrows or hand-carts, by women, which sold at from a few sous each to four or five francs a dozen.

A ride by the cars gave me a slight opportunity to see the environs of Paris ; there were many curious and picturesque cottages to be seen, some

of them small, with little gardens filled with rock-work, piled together in a most grotesque manner, yes, in the most absurd manner, considering that the whole garden was often not thirty feet square. Arbors were often noticed, and vines and fruit trees were trained to the walls.

We saw many places where the grape was cultivated ; they were planted in rows, perhaps two or three feet apart, and trained to slender sticks about four feet in height. Grapes were quite plenty in Paris, but I saw only one variety,—a light-colored and sweet grape, much resembling the Golden Chasselas, and cost about one franc a pound. Some beautiful specimens of preserved fruits were seen in a shop in the Rue St. Honore ; the apricots especially beautiful.

The grape vines are not always treated as above, for at Clermont I saw one clambering in a most luxuriant manner,—that would equal any of our own,—over an apple and an elm tree, entirely innocent of the pruning-knife.

Pear trees were very numerous about Paris, and with apple-trees were often noticed in the route to Calais ; some cherries, plums, and apricots, were seen near Versailles.

I don't know when I have been more pleased than with the little gardens of the old soldiers, at the Hotel des Invalides. Though not more than twelve by twenty feet, yet each one was enclosed by a low fence, had an arbor at one end, overrun by a grape vine, or some creeper, and in it was a seat with a small table, where the old veterans "made themselves comfortable." In the centre of most of the gardens was planted an apricot, cherry, or pear-tree, and in many of them a variety of roses or other plants, currants, gooseberries, &c. ; some were very neatly kept, with narrow walks, edged with box, and were quite charming in appearance.

In London, pears were plenty, and apples also ; in the shops, Duchesse and Vicars were most common, and were selling at three shillings and sixpence to four shillings a dozen—very fair specimens as to size and quality ; large and smooth St. Germain's were of the same price ; in the streets less was asked, though they were smaller in size. The Vicars were raised in England,—many of them,—though the Duchesse and St. Germain's came from France ; the Vicars were much better in quality than any which I ever ate raised here ; in fact I never ate so good raised in America ; I have tasted better and larger Duchesses here, especially some raised by F. L. O., of Staten Island.

At Windsor, I bought some Beurré Ranz, a variety which I never knew to do well here, but which was raised in that vicinity. I brought home one very large and fine specimen, which was juicy, melting, and of very good, though not very high flavor.

Many orchards of pear-trees were seen in England, especially about London ; they were planted near together, and were trimmed up high, perhaps to allow of the cultivation of vegetables underneath.

It is difficult to persuade an Englishman that anything superior can be found out of England. "There are no apples in America equal to our apples," said a cockney on board ship, "and as for strawberries, why,"—turning up the nose most contemptuously—"you don't pretend that you have any strawberries in America that are as good or as abundant as ours." Though he heard of something which was done every summer in the strawberry business in the vicinity of Cincinnati, I don't suppose it had much effect upon him. The very embodiment of selfishness, sometimes, is an Englishman. But I refrain.

AGALMYLA STAMINEA.—(LONG-STAMENED AGALMYLA.)

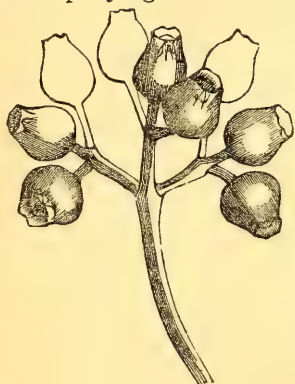
THE large silver medal was awarded to Messrs. Veitch & Son, of Exeter, for a beautiful new Gesnerwort, named *Agalmyla staminea* (Fig. A),



Fig. A.

obtained from Java, through their collector, Mr. Thomas Lobb. The plant exhibited was the first that had bloomed in this country; it was a stout, herbaceous, creeping-stemmed plant, with large elliptic leaves, from the

axil of which was produced a dense cluster of rich velvety crimson flowers, like those of some *Æschynanthus*. Though beautiful, even in the condition in which it was shown, it, however, conveyed no sufficient idea of what it may be expected to become when better grown; for, in a dried specimen from Java, which was also exhibited along with it, instead of one bunch of flowers on a branch, it had seven, clothing the shoot for about two feet with its gay blossoms. Being a plant of easy cultivation, it will no doubt become one of the gayest inhabitants of our stoves. With it was a branch of *Medinilla speciosa*, bearing a fine cluster of purplish red fruit, of which the accompanying wood cut will give some idea, and which are nearly as hand-



some as its semi-transparent pink flowers of summer. This is also a Java plant, whose broad concave fleshy leaves, large bunches of flowers in summer, and fruit in autumn, deservedly place it among stove plants of first rate character.—*Horticultural Society's Journal*.

[A colored portrait of the *Agalmyla staminea* is in the fifteenth volume of "Paxton's Flower Garden." The generic name is derived from *agalma*, an ornament, and *hule*, a forest, for it is a beautiful decoration of its native woods. It requires a moist, warm stove, with liberal watering and syringing during its period of growth. When at rest it must be kept nearly dry. A soil of two parts turfy peat, one part loam, and

one part sand, with good drainage, suits it. It is propagated by cuttings planted in sand under a glass in heat.

Medinilla speciosa is beautifully represented in the "Botanical Magazine," t. 4321. As its name (showy) implies, it is one of the most beautiful of the genus. It produces a fine panicle of delicate rose-colored flowers, drooping gracefully from among rich green and ample foliage.]

THE AMERICAN POMOLOGICAL SOCIETY.

BY AN ORIGINAL MEMBER.

ON the first of September, 1848, the convention of pomologists which eventually resulted in the organization of the American Pomological Society, was held in the city of Buffalo. Ten years having since elapsed, during which time important results have been achieved by the Society, a brief retrospect of its past labors, and a few suggestions relative to its future course, may not be mistimed.

Being from its inception deeply interested in the Society, I have been present at nearly all its meetings, and observed with attention the operation of the method of procedure which has been usually adhered to, with success. In the course of debate it occasionally happened that time was consumed upon matters of little moment; but I am of the opinion that upon no other plan could the efforts of the Society have been better directed, or more efficacious in extricating the science of pomology from the disorder and

confusion in which it was involved. Whether for the future that plan can be improved upon is a subject which I shall present for consideration.

During the past ten years the Society has accomplished much—perhaps more than any but its most sanguine members anticipated. It has catalogued nearly 1000 varieties of fruit, which are classified in the following manner.

Fruits recommended for general cultivation :

Apples, 36.	Pears, 41.	Peaches, 15.	Nectarines, 3.
Apricots, 3.	Plums, 14.	Cherries, 14.	Native grapes.
Foreign grapes.	Currants, 5.	Raspberries, 7.	Blackberries, 2.
Gooseberries.			

Pears for cultivation on quince stock, 25.

Recommended as promising well :

Apples, 12.	Pears, 41.	Peaches, 5.	Plums, 11.
Cherries, 9.	Native grapes, 4.	Currants, 3.	
Raspberries, 4.	Strawberries, 6.		

For special localities, &c. :

16 varieties of various fruits.

Rejected.

Apples, 126.	Pears, 351.	Apricots, 5.	Plums, 31.
Cherries, 32.	Grapes, 2.	Raspberries, 3.	Strawberries, 75.

The benefits conferred upon the fruit-growing community, and the amount of time, labor, and expense saved by this classification, are beyond calculation ; in my own opinion the Society would have deserved well of its country, had it accomplished nothing beyond the condemnation of the 625 varieties contained in its list of rejected fruits. But it has done more : a vast number of synonyms and errors in nomenclature have been exposed and corrected ; much valuable information respecting the culture, pruning, and training of the tree, and the preservation and ripening of fruit, has been elicited ; and in the compilation of the State reports, a mass of matter has been collected, of interest to every pomologist.

We have seen what has been already done, let us now look forward to the future.

That the system heretofore pursued, of recommending fruits for general cultivation, has limits to its successful operation, is evident from the fact that comparatively few varieties are equally adapted to every part of our extensive territory. Members have at different times spoken of the disadvantages attending this practice ; and at the last session a protest from southern Ohio was recorded against nine apples now upon the general list, as unsuited to that region. As that list is enlarged, the objections will of course become more frequent and forcible, for but a limited number of varieties are thoroughly tested in every State. These being exhausted, there are obvious reasons why imperfectly known sorts will fail to obtain a place on the list. It would indeed be improper and unjust that they should be placed there.

To show that I am not alone in the opinion that the time has arrived when we should make a change in our system, I need only refer to the resolution offered at the last session by Mr. Walker, the chairman of the general fruit

committee. Other members evinced a disposition to make alterations in the general list, which was very properly received with disfavor. Mr. Walker's motion I considered a step in the right direction, and regretted that it met with so little approbation. My own views are, in the main, consonant with his, and I will suggest a mode of procedure which I conceive would be productive of the best results.

Our general list is already sufficiently large for all practical purposes; let it stand as it is: we may occasionally add a variety with advantage, but it should be done with caution. Let the chairman for each State be empowered to appoint the remainder of his committee of seven, and be charged with the duty of preparing, conjointly with them, lists of varieties adapted to the soil and climate of their State. When, as in some States, there exist well-defined, natural divisions, possessing some peculiarity of soil or climate, special lists should be prepared for such locality, and in case any variety now upon the general list is found unsuited to a particular locality, it should be reported as being so.

These lists, being placed in the possession of the general chairman, should be presented by him at each meeting for the consideration of the Society, and no important objection being made, be promulgated under its recommendation. The general chairman should also issue circulars (as has sometimes been done) to each State chairman, designating certain points upon which information may be desirable, and directing the attention of his committee particularly to those points. In this manner we should, I think, improve upon the present voluminous system of State reports, which, however valuable, are too liable to become in some particulars repetitions of each other.

The committees on native and foreign fruits and synonyms, should all be required to report at each meeting, in accordance with the by-laws. It appears to me too, that in a society numbering more than 160 members, many of whom are pomologists of experience, there must be a sufficient number, who are qualified to serve on those committees with credit to themselves and the Society, to obviate the necessity of appointing *one* member upon the *whole three*, and *three* others upon *two* each, as is at present the case.

With respect to our lists of "rejected fruits," and those which "promise well," I have no alteration to suggest in our present course. Let additions be made to them in the usual manner. The former list, I for one should be glad to see increased, and the latter would be prevented from attaining an undue magnitude, by the draft made from it by the recommendation of the State committees.

The few varieties which are recommended "for particular locations," would doubtless soon be incorporated in one or another State list, and that rather unsatisfactory division be allowed to disappear from the catalogue.

I think that the compilation of a catalogue embracing every variety under cultivation in the country, as suggested by Mr. Walker, is an important measure, and should be at once commenced; but would of course require a long time to bring it to any approximate degree of perfection. It should contain not only the correct standard name of each sort, but an accurate list of its synonyms, and would naturally become the standard of nomenclature on this side of the Atlantic. The demand for it from non-members would doubtless amply repay all expenses attending its publication.

I offer these suggestions in the hope of advancing the cause of pomological progress, and in order that they may be fully and freely discussed, *ad interim*. If I have the good fortune to be present at the next session, I intend to bring the subject more formally before the Society; should I not, I trust that some more worthy member will carry out my intentions.

Respectfully,

JNO. B. EATON.

THE WINTER OF 1858-9, ON EVERGREENS.

BY H. W. SARGENT, WODENETHE, FISHKILL LANDING, NEW YORK.

THE public have been so recently informed (at least that portion of them who may have seen the new edition of "Downing's Landscape Gardening") respecting the comparative hardihood of evergreens, that but little remains to add to the tabular view in the supplement to that book.

The further experience of two months since this work was published,—two months, which generally are the most trying upon half-hardy plants,—has enabled me to add one or two facts which may be interesting to the planters of new conifers.

While the general list of the newer things has gone through the winter with its usual average success, there are some varieties heretofore untried, which have more than realized the best anticipations.

Both *Cupressus Lawsoniana* and *Thuja gigantea*, have at least, this their first winter, done wonderfully well, as with a slight cedar protection they have both preserved their color and character most charmingly, looking quite as green, and feeling as soft and pliable, as the same plants wintered in a greenhouse.

Although the experience of one or two more seasons is required to pronounce unqualifiedly about their entire hardihood, yet, when it is remembered that these trees passed through a temperature of $\frac{9}{16}$ upon this place for two days, sufficient to do a great deal of damage to well established and comparatively hardy plants, and even to destroy peach buds, during which excessive cold and ever since they have never faltered or changed color, I feel we have reason to be sanguine as to their complete success.

Thuiopsis Borealis—without any protection, came through equally well; and as this is the third winter it has been out, with me, I consider this tree a fixed fact.

Abies Whitmanniana—or *A. Obovata*, out for its first winter, is equally successful and hardy.

Cephalotaxus Adpressa—also out for the first time, is entirely hardy, while its older relatives—*Cephalotaxus Fortuni*, male and female,—have proved themselves beyond question most reliable; especially the male plant.

Abies Douglasii—established plants, entirely exposed and perfectly untouched.

Cryptomeria Japonica—of different sizes and ages, and in different positions. Some protected by cedar branches; others entirely exposed, but standing on the north side of a wood, have had equal good luck, and are equally green and perfect.

Cunninghamia Sinensis—in a wood and slightly protected, is not in the least browned.

Cupressus Funëbris—with every advantage of shade and protection, is destroyed, and I shall make no further attempt with it, having tried many unsuccessful experiments for several years. (In Phila. uninjured.—Ed.)

Pinus Palustris has stood, perfectly well protected; but the specimen tried was a small plant, and was a good deal under the snow, so that I am not willing to pronounce upon it until after further experience.

Podocarpus Andina, *Magnolia Galissoniere*, (evergreen), and the *Portugal Laurel*, have all lost or will lose their foliage, but the wood and buds seem sound and good.

If, however, we can be assured of the success of that most exquisite of trees, *Cupressus Lawsoniana*, and also of the new *Thuja gigantea*, it is quite sufficient for one winter.

Washingtonia gigantea has stood perfectly well in a wood, but browned on the open lawn. In connection with this tree, I wish to remark, that *Meehan's Gardeners' Monthly* finds fault with my placing it by itself as a separate genus, instead of adopting, I suppose, the English name *Wellingtonia*, which I have given as its synonym. But how is it possible to describe a plant otherwise than by the name recognized as national by all the amateurs and nurserymen in the country.

Nobody knows this tree as *Wellingtonia*, or calls it by this name. My impression is that there has always been a discussion between the English and American discoverers, as to who found it first; at any rate, there has been sufficient question about it to justify the pertinacity with which American botanists persist in calling it *Washingtonia*; and as the tree, whether *Washingtonia* or *Wellingtonia*, is a distinct and separate genus, I do not know how my classification can be avoided until we consent to call it *Wellingtonia*; which, I presume, will never be.

The *Gardeners' Monthly* likewise finds fault with my classing Mr. Nuttall's *Thuja gigantea* as *Libocedrus decurrens*, and *Craigiana*, contending that Nuttall's *Thu. gigantea* is really figured by him in Michaux as *Thuja Menziesii*, and partly *Thu. Plicata*; now in the *Traité General des Conifères*, by Carrière, published in 1855, and in Gordon's *Pinetum*, published in 1858, both the most comprehensive, accurate, and latest authorities on Conifers, I find but *one real Thuja gigantea*, which is Nuttall's, and synonymous with *Libocedrus decurrens*, and *L. Craigiana*,—that is to say, the *Arbor Vitæ*, called by Mr. Nuttall *gigantic*, is the same tree called by Dr. Torrey *Libocedrus decurrens*, by Jeffrey *Thuja Craigiana*, by Lawson *Thuja glauca*, by Rafinesque *Abies microphylla*. While the *Thuja Menziesii*, which the *Gardeners' Monthly* maintains is the true *Thuja gigantea* of Nuttall, is synonymous with *Thuja Plicata* of Lambert, *Thuja Lobbii* of the Hort., as well as *Thuja Lobbiana*, and lastly, a *Thuja gigantea* of Hooker,—but both these authors distinctly remark, not of Nuttall. Now I cannot believe two such high authorities (the authorities both in England and France) could be so egregiously in error as to represent Mr. Nuttall's *Gigantic Arbor Vitæ* as the only and true *gigantea*, when he represents it himself as the same as *Thuja Menziesii* and *Plicata*, which they distinctly deny.

I am more disposed to believe that subsequent acquaintance and better knowledge of these different varieties have induced these gentlemen to classify them as they have; and although the difference between the two genera of *Thuja* and *Libocedrus* may be and is sufficiently distinct when all their characteristics are developed; yet, when the plants are young, the

resemblance between them is so strong (for they are nearly allied) that it is not surprising that Dr. Torrey classed as a *Libocedrus* what Mr. Nuttall called a *Thuja*, in the same way as the Funereal cypress was by many arboriculturists classed as a *Juniper* on its first appearance ; beside which, when we recollect the *Thuja Menziesii* only grows forty to fifty feet high, while the *Thuja gigantea* grows one hundred and forty feet, it would seem a misnomer to call the first Gigantic instead of the latter, which is more than three times its size.

CINERARIAS.

BY DANIEL BARKER, WEST MERIDEN, CONN.

LIST of new Cinerarias raised and flowered in America, many of them surpassing any hitherto imported from Europe : they are selected from upwards of 500 seedlings, and form not only a most beautiful, but a distinct and unique collection ; they are all of excellent form and substance, some of the individual flowers measuring from one to one and a half inch in diameter. This entire collection is now, March 12th, in most luxuriant health and flower. One specimen measured this day, gave the following dimensions : circumference, nine feet—from the pot to summit of flowers ; 21 inches across the foliage ; one leaf $10\frac{1}{2}$ inches.

No. 1. A very bright rosy purple, with a pure white ring round a very dark disc ; a great improvement on *Magnum Bonum* ; fine form and excellent habit ; one of the most beautiful varieties ever raised.

No. 2. A soft rich violet plum, with a small white circle round a dark disc ; fine form and habit ; dwarf and very compact.

No. 3. Lavender blue ; very large flower petals, wide and of good substance ; habit, dwarf and compact.

No. 4. Purple crimson, of fine form and excellent habit ; very dwarf. Extra.

No. 5. Deep blue, of fine form, and habit of plant unsurpassed.

No. 6. White ground, with a violet purple disc ; slightly and delicately tipped with soft lavender blue ; habit of plant extra fine ; a delicate and beautiful variety.

No. 7. White, with a fine rosy crimson edging ; habit and form of flower extra fine and effective ; a great improvement on *Optima*.

No. 8. White ground, beautifully tipped with a delicate violet blue ; habit dwarf, and fine ; one of the finest of its class.

No. 9. A most attractive and beautiful variety ; a bright amaranth, with a small ring of pure white round a dark disc ; habit of plant dwarf, and a very profuse flowerer.

No. 10. White, with a deep ring of light blue ; fine form and extra fine habit ; a very fine variety.

No. 11. White, beautifully tipped with a delicate violet blue ; habit very dwarf and compact.

No. 12. Pure white ground, distinctly tipped with bright rosy amaranth ; fine form and excellent habit.

No. 13. Pure white, heavily and evenly tipped with lavender ; a fine flower of great substance ; a noble variety.

SYRINGE AND SUCTION PIPE.

As a companion piece to the watering-pot in the last number, we copy an English invention on the plan of a syringe and suction pipe, with a convenient spout to use in the greenhouse, by which the water is discharged



without splashing, in a continuous stream. Various descriptions of spouts may be employed for the upper or under parts of leaves. It can be used as a watering-pot.

GRAPE CULTURE.

BY WILLIAM CHORLTON.

MR. EDITOR :—In your February number, Mr. Eaton, of Buffalo, has an article on "Facts in Grape Culture," in which occurs the following paragraph:

"My practice is, to ventilate freely throughout the season (except, of course, when the outside temperature is too low); and in this respect I differ from some of my neighbors, who implicitly follow Chorlton's directions (which doubtless answer perfectly well for his latitude), and keep their grapes upon a short allowance of air until late in the season. The consequence is, that their vines grow late, fail to mature their wood perfectly, and are in no condition to withstand the intense cold to which they are occasionally subjected. Indeed, in some houses the vines have been killed to the ground. My vines ripen their wood early, and are apparently not injured

by the cold in the slightest degree, although my vinery is not one of the warmest, being far from air-tight."

Now, without any disrespect towards the above-named gentleman, I would like to know how he arrives at such a conclusion as the believing that I ever advocated "a short allowance of air until late in the season." If he will examine my routine of practice more closely, it is more than probable he will find there is a slight mistake in his present understanding of the subject, for no person admits air more freely than myself; but I do most positively protest against introducing every meteorological state of the atmosphere in the form of an under-current, and for reasons the knowledge of which has been gained by practical experience, without the necessity of any scientific observance, which will, however, bear me out. Mr. Eaton admits an exception in his own mode, "when the outside temperature is too low," which, it may be presumed, very often occurs at the beginning of the season. He may differ from some of his neighbors for aught I know, but I am somewhat sure that some of them are not far below his excellence, who have implicitly followed "Chorlton's directions;" for those directions are founded upon the requirements of the constitutional habits of the Exotic grape vine, and are moreover established general principles, suited, with very slight modification, to any part of the country. There is plenty of testimony in existence at the present time, if wanted, to prove such assertion; and examples, to show that what he gives us to understand is the right method was certainly wrong, and which have been a grand success when those "directions" were forced upon the operator, and carried out; yes, where canes of last summer averaging from one inch and a half to one inch and three quarters in diameter have been perfectly ripened,—not simply brown in the bark, but thoroughly indurated. If Mr. Eaton had stated details instead of assertion, we might have gained some knowledge; as it is, we are not apprised what are the peculiarities of his position as to shelter, whether or not he used any covering for the last three winters, what is the relative vigor of his vines compared with his neighbors, and if theirs are or are not in a healthy state as to roots, &c.: all these explanations would be of much importance at the present time, and would tend to give the uninitiated some useful information.

Before closing this notice, allow me to state a physiological fact. All plants have, as it were, two stages of vital action during the revolution of the four seasons, viz. *Development*, and *Concentration*. The first is simply an expansion of the previous year's fulfilment of the latter; while the present in its turn does the quota of duty for the future. It matters not whether the subject be indigenous to the hottest tropical valley, or the loftiest mountain of cooler latitudes, the circumstances are comparatively the same, and exist in a more or less varied degree of intensity according to the peculiarities of organized structure. When these two stages of periodical growth are permitted to progress unmolested by any injurious interference until the turn point for another commencement, it is obvious to reason that nature's intentions are accomplished; and so long as the circumstances are maintained, the same result will follow to the end of matured lifetime, and so on, from generation to generation. To insure this desideratum, I have advised, and am continually advising, to beware of bottom drafts and under-currents of cold air, in graperies and plant-houses, and also recommending shelter around orchards and vegetable plots, in order

to avoid these destructive companions of our daily toil. The geographical formation of our northern continent renders us liable to all kinds of sudden differences in the atmosphere: no sooner is a current started in one direction, than we are expecting it to change to the opposite point,—hot, dry, moist, cold, and all in the condition of surface drafts, unless intercepted by lofty trees, or other protection. What is the consequence? a frequent stagnation of the circulating fluids, and tendency to those circumstances by which fungoid vegetation can luxuriate. Hence our mildew on the gooseberry, grape, pear, pea, and hosts of other plants, familiar to all observers, the accompanying checks against the healthy progress of many plants, and our common expression, *Blight*.

Nature generally disposes her organized beings in suitable regions according to structure, but man often desires, in his peregrinations, to have his old associates; also the luxuries which other climes afford, and all these centered in one spot; and, as it is impossible for him to alter what the Great Designer has formed, he has no alternative but to coincide with what is, and adapt his action to nature's demands, or expect to be defeated in his wishes. In our particular case the *vitis vinifera* is so constituted as to require a long, steady, and warm temperature to produce maturity, and all Mr. Eaton or any other cultivator may say to the contrary, it will have it. Let us have all the details of practice,—how, and by what temperature, what is the growth of the vines, size and quality of fruit, and all other explanations, by which he obtained his well-ripened wood, and made the vines more than usually hardy, without reference to any man's advice or method; and we shall, perhaps, receive a useful hint, and another evidence of what is required to arrive at the best success.

BUDDING AND GRAFTING.



THE modes of multiplying improved varieties of fruits so as to retain the same qualities as exist in the parent tree, are various. Those most usually resorted to are increasing by eyes or buds from cuttings, layering, budding, or grafting. Unless we possess this power, so that we can apply it readily and with certainty, our means of procuring improved fruit will be very much circumscribed.

The usual method of increasing plants provided by nature, is by seeds. Seeds increase species without error. The peculiarities of varieties can rarely be perpetuated in the same manner. Hence the necessity, to secure the increase of a variety with all its qualities unaltered, that a portion from the original tree or plant should be taken, and converted into a new plant. In the structure of plants there is a wonderful provision made for the preservation of their specific qualities, and also for the increase and extension of their varieties. In animals this is not practicable, except in the case of a few of the lower orders of animals. The system of plants is otherwise; a plant is really an animated body, composed of infinite multitudes of systems of life, having the principles of vitality and reproduction diffused over every part, all indeed, united in a whole, but each having an independent existence.

When, therefore, any number of these systems of life are removed, those that remain, as well as those which are separated, will, under favorable circumstances, continue to perform their natural functions as if no union had ever existed. These systems of life are buds, each having the power of sending forth descending fibres in the form of roots, and also ascending in the form of the stem. They are the most important part of the plant; and it is only by them and the various forms which they assume, that the increase or propagation of plants is effected.

The bud is the embryo tree. As secondary buds develop, their descending roots combine and form the woody vessels of the stem, which descend in successive layers to the extremities of the roots and thus promote their extension. Roots are the elongation of the stock. Experiments with the willow have shown that a part of the top at different periods may be covered in the soil, while at the same time a portion of the roots are exposed, and that in a short time the whole tree may thus be reversed, the top becoming roots and the roots top. The stems ascending give rise to new buds, thus producing a succession of independent systems of life combined together as a whole. These buds are all exactly alike, have the same constitution, the same organic structure, and the individuals they are capable of producing are consequently identically the same, allowance being made for any accidental injuries or alterations.

The growth of the stem of the tree is nourished by the ascending sap through the roots of the bud; and as buds and leaves multiply and increase, their constant office is, to draw the sap to the extremities of the tree, and in this manner supplying the necessary food for the new-growing wood, while at the same time the buds are shooting down between the bark and wood of the stock, in search of additional food for the supply of this new growth. It will be seen from this, that the limb produced by the graft or bud, is in itself a distinction incorporated with another, and deriving therefrom its sustenance. It is upon the existence of this remarkable peculiarity of plants that propagation entirely depends. Take a cutting of a vine consisting only of the space which lies between two buds, and no art will succeed in making it become a new plant. The only exception to this rule is those plants which possess the power of emitting latent buds.

On the other hand, take a bud without any portion of the wood adhering to it, and it will throw out root and stem, and become a new and distinct plant. The ordinary way of propagating trees is by budding and grafting.

The end attained by these methods of propagation is, to multiply and increase varieties of fruit trees endowed with particular qualities, and which cannot with certainty be transferred to their offspring by seed, and which would be multiplied too slowly or ineffectually by any other mode of propagation; and also of rendering such trees as are somewhat tender, more hardy.

Budding and grafting are operations equally dependent for their success upon the property that buds possess of shooting roots downwards and stems upwards, and the theory of these processes is based on the power of union between the young tissue of the growing wood. When the parts are carefully placed in contact, the ascending sap of the stock passes into and sustains life in the scion. The roots of trees quite unlike will sustain the life of each other. An apple grafted into the root of the willow will sustain life until roots shoot from the scion. The pear and apple, the peach

and plum, are like examples of this. The buds, whether single or in scions, excited by the supply of sap from the stock, and the warmth of the season, begin to elaborate and send down roots or woody matter between the bark and wood of the stock, which contact unites the graft or bud firmly with the stock, and the stem commences making its upward growth. The success of this operation depends upon the necessity that an adhesion should take place between the scion or bud and the stock, so that when the descending fibres of the bud shall have fixed themselves upon the wood of the stock, they may not be liable to subsequent separation.

This is facilitated by the fact, that in the vegetable kingdom there is a strong tendency to cohesion in bodies or parts that are placed in contact with each other. We often see this exemplified in the growth of trees, and fruits becoming united or double when in close connection with each other.

Budding and grafting is therefore, like layers, cuttings, and suckers, the dividing of the original tree into parts. Even when the operation is the most successful, no intimate union takes place between the bud and the stock. They grow firmly together, but do not incorporate. You may insert several buds of different varieties of fruits upon a stock, one above the other, and each will produce its distinct variety, while the stock will remain unchanged, and produce its original fruit, both above and below the inserted scion. Or insert portions of bark of different trees, and the wood underneath will be that of the tree from which the portion of bark is taken, while above and below the original wood will remain the same.

The range of grafting and budding is confined within certain limits. It is only those trees that are allied to each other, upon which these operation can be successfully performed; and it is only when there is a close relationship and similarity of structure between the scion and the stock, that a favorable result may with any certainty be looked for. As a general rule, the seed, cone, nut, and mast-bearing wood, should be worked upon each other. That the stock in some cases and to some extent affects the graft, and that the graft also affects the stock, is undoubtedly true. In this way we may, I think, account in some measure for the difference in the quality of some varieties of fruits upon different trees, and also why some trees of the same variety are more tender than others.

It however remains true, as a general proposition, that the fruit produced from the scion will be the same as that from the parent tree. The scion or bud is possessed with the power of drawing or forming from the stock that peculiar kind of nourishment which is adapted to its nature, and the specific character of the ingrafted plant remains unchanged, although its qualities may be partially affected, a risk which is always incurred when propagation is attempted from seed. The ancients boasted of vines and apples grafted on poplars and elms, and one speaks of a tree which he had seen "grafted and laden with all manner of fruits. One bough bearing nuts, another berries; here hung grapes, there figs; in one part you might see pears, in another pomegranates; and to conclude, there is no kind of apples or other fruit, but there it was to be found." He adds, "But this tree did not live long."

"And in our own day the Italian gardeners pretend to sell jasmines and honeysuckles on oranges and pomegranates." This is said to be ingeniously managed for a short-lived effect, by introducing the stems of these smaller plants through holes bored up the centre of the stock, their roots

being in the same soil, and their stems after a little growth fill up these holes, appearing as if really grafted.

But repeated experiments by the most skilful cultivators of modern times have clearly proved that, although it may be possible in a thousand trials to succeed in effecting some of these ill-assorted unions, yet the graft invariably dies after a few months' growth.

Among the practical advantages of grafting and budding are, the preservation and dissemination of choice varieties of fruits; without the knowledge of this art, with the termination of the life of the original tree many of our best fruits would cease to exist—with it, we have the power of increasing them to almost an unlimited extent. J.

PEARS AND OTHER MATTERS AT THE SOUTH.

MR. EDITOR:—The past winter has been, with the exception of two or three short spells of cold, a remarkably mild one. I have had roses in bloom until about two or three weeks since, and peach trees have been blooming all the winter; but the general blossoming for fruit is now at its height. Even pear-trees are showing some straggling flowers, which, though rather early, will, I hope, escape frost, as I have never had any killed.

I sowed last April some Purple Kohl Rabbi seed, received from the Patent Office, which succeeded well, and when nicely cooked proved very nearly, if not quite, equal to cauliflower.

The winter proved very favorable to cauliflowers, and I had an abundance of them; and the spring has been equally so to Brocoli, or very late cauliflowers, I rather think, as I now have fine heads. The Purple Cape Brocoli runs into all sorts of monstrosities, but has never headed for me; and the cabbage lice are so fond of it and the Brussels sprouts, that I have to give up both. There seems to be something in my soil or situation peculiarly favorable to the Aphis, for they follow my crops of all the cabbage and turnip tribe, all over my plantation, sometimes a mile from my garden. Is there no remedy for them? I have failed to find one as yet.

I do not think that the pear crop promises as much as it did last spring, probably for the very good reason that I had my trees overloaded despite of severe thinning, and this summer I suppose they feel disposed to rest a little from their labor. I can grow neither apples nor peaches here. By-the-by, do you know that I have never either seen or heard of the yellows any where about here? I have an abundance of peaches on another plantation where the land is sandy. Pears do remarkably well with me here, although my land is low, damp, clayey, and salt, being hardly more than two or three feet above spring tides, which come almost up to my garden fence.

After all that has been written against dwarf pears, I feel bound to speak a word in their favor. I have been growing pears since 1837, and started with about equal quantities of standards (or on pear roots) and dwarfs (or on quince), and now have about as many left of the dwarfs as of the standards,—indeed, I think rather more. I have not found, therefore, the standard trees less liable to blight or other diseases than the dwarfs.

Both grow on the same land, and were originally alternately one and the other, both ways. The disease that has killed almost all my trees has been the death of the roots, sometimes even before the tree had borne one fruit; at others after the first good crop,—the top appearing quite sound and good. I have had comparatively few cases of fire blight; and against this, trees branching from the ground were no better protected than those trimmed high. Among the varieties that I have grown, those that grow most vigorously upon quince are, first, Rousselet de Rheims, Buffam, or Golden Beurre, of Bilboa, (I rather think the former), the winter Bonchretien, and Doyenne Roux, or Gray Doyenne. Others may grow as well, but either I have not had them, or not had them long enough to prove. The Rousselet de Rheims is an abundant bearer; fruit of full medium quality, and in gathering from 20th June to 20th July, and in eating from say 1st July to 5th or 10th August, a season when good pears are not very abundant.

The Bartlett does quite as well with me upon the quince as upon the pear,—in fact my original tree is upon quince. Bearing early and abundantly, of course it does not grow very fast. My pear-trees are set in my vegetable garden, and vegetables are grown all around them without any injury to the trees. I prefer small or dwarf trees, simply because I can prune them myself, and without ladder or hatchet; and then, I can gather most of the fruit myself, and keep them separate, to taste. In spite of the millions of pear trees that are annually set, I do not believe that good pears ever will become either abundant or cheap. The trees require no excessive care, but still they require some constantly, and then it depends upon the gathering and keeping whether the fruit shall prove delicious or worthless. One cannot say to a common laborer with you, nor to a negro with us, “go and gather such and such pears,” lest they should be threshed down with poles, or knocked about and bruised, and thus rendered useless for anything but cooking. The hardest work I do during the summer, is gathering pears and peaches. Some late ripening pears are wanted among us at the South. I will give you the times of gathering of a few reputed “late:” Epine Dumas, Sept. 3; Colmar de Silly, Zephyrine Gregoire, Lewis, Lawrence, Vicompte De Spoelberch, Sept. 18; Josephine de Malines, and last, Easter Beurre, Oct. 6. The winter Bonchretien and St. Germain, sometimes keep, a few, until about Christmas, but last year neither bore good fruit. The Royal (Rousselet?) d’Hiver was gathered in November, and kept until near Christmas, but it is only a pear, and would not be touched at any time earlier. The Bezy de Bretagne has proved a most abundant bearer; fruit russeted, and of medium or small size; excellent for cooking, and the latest are crisp, juicy, and sweet. It is very superior in every respect to the Martin Sec, and much later.

When you have read thus far, I suppose you will say that it is well that there is an end to everything, and more especially to this treatise, “*de omnebus rebus et quibusdam aliis.*” So, adieu. [Au contraire.—Ed.]

Yours respectfully,

ROBERT CHISOLM.

Beaufort, S. C. February.

LARGE TREES.

BY S. B. BUCKLEY.

THE American Plane tree or Sycamore, (*Platanus occidentalis*), called also Button-wood in some sections, is a well-known tree, being found in nearly all the States east of the Mississippi river. It prefers the alluvial banks of streams, and attains its greatest size near the Ohio river and its tributaries. There is a "big sycamore" forty miles below Cincinnati, three miles east of "Rising Sun," in Indiana, on the farm of Israel Loring. It is near the main road,—along which the telegraph wires are stretched,—on the banks of a small stream, not far from a large gate and tenant house belonging to Mr. Loring, whose tenant told me that the tree was seventy-five feet in circumference. I asked him to hold one end of the tape line to measure it. We found its dimensions to be somewhat less than he supposed, and he then told me that a gentleman had ascertained its circumference by stepping around it. It is thirty-nine feet nine inches in circumference, at four feet from the ground; at three feet from its base, forty-one feet in circumference; and at the ground, fifty-five feet three inches in circumference. It is hollow, and a section of its trunk would be an oblong ellipse, whose greatest diameter is about twenty feet. At about eight feet from the ground it divides into two large branches, which have numerous spreading, healthy limbs. There is but a small opening of a few inches in diameter into the hollow trunk, which should not be made larger, but the tree should be protected and suffered to live yet many summers and winters. Its age will always be a subject of mere conjecture, still it is not improbable but that it may be the oldest thing east of the Mississippi. A true history of the principal events which have taken place in the valley of Ohio during its life, would be exceedingly interesting to many, especially to those who are trying to solve the still mysterious origin of the Western Mounds.

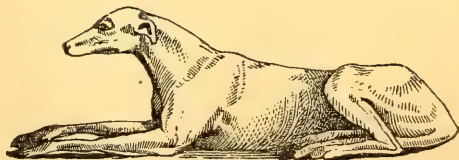
There are two plane trees about a mile above Louisville, Kentucky, on the bank of the Ohio river. One is twenty-seven feet in circumference, and the other twenty-eight in circumference. They are mere shells or hollow trunks, united at the base and dividing at about three feet from the ground. Their tops have been blown off at ten or fifteen feet high, and their huge, limbs lie scattered around (June, 1858). A few green, small branches were struggling to preserve alive the standing stumps of these huge horns, whose hollow trunks but a short time before would have afforded a comfortable dwelling for a small family. At the same locality are other plane trees. One is twenty-one feet six inches in circumference; another twenty-one feet in circumference, and two of nineteen feet in circumference. A large portion of the sycamores at the West have an unhealthy appearance. They abound in dead branches, having probably had the same disease which a few years ago killed many of the plane trees in the vicinity of Philadelphia. The diseases of trees and the ordinary age of each species are as yet but little understood, but that some die young, while other specimens of the same species attain a great age, is well known.

Michaux calls the sycamore the largest tree east of the Mississippi river. We saw one on the north bank of the Ohio river, thirty-six miles from Marietta, which was forty-seven feet in circumference at four feet from the

ground ; another measured by him on the banks of the same river, between Cincinnati and the rapids, at Louisville, was fourteen feet in diameter.

It must be remembered that all, or nearly all, the large sycamores are hollow, and they are rarely more than sixty or seventy feet high ; hence, we have other trees which probably contain more solid feet. Its wood is brittle, and of no use in the arts. It has been planted for ornament, but now is rarely cultivated. There is another more showy species west of the Rocky Mountains.

FUCHIAS.—One of the most important considerations, and which must receive particular attention, is the proper preparation of the compost in which to grow the plants ; for, if the radical condition of a plant be at fault, no future treatment, however consistent, will produce the desired result. Soil that has been at least twelve months in the compost ground, frequently turned over during frost, and, if turfy, broken into lumps as small as walnuts, is the material best suited for all plants. To have the finest specimens in flower in May, cuttings are taken at the end of July, or beginning of August, from growing shoots, which have no flowers or flower buds on them : the points are best. These are inserted in rather light sandy material, in thumb-pots, clean and well drained, and the pots plunged, near the glass, in a frame, with a gentle bottom heat. They are shaded, and occasionally sprinkled, in the afternoon, in hot weather. When rooted, the plants are removed to a cooler situation, but are kept growing, and repotted as they need it, until they are in six-inch pots, in which they are wintered. The soil used is equal parts of rough loam, peat, well decomposed leaf mould, and about one-sixth silver sand. A moderate supply of water, during the dull months, and the usual temperature of the greenhouse, is all that they require. The side shoots are duly stopped as they proceed in growth. They receive their final shift into thirteen-inch pots, about the first week in February, using the above compost, with the addition of some rough charcoal, and are exposed to a temperature of from sixty to seventy degrees by day, and fifty by night, with shade in clear weather. They are frequently syringed with soft water, and after the plants have begun to grow rapidly, manure water is applied twice a week. Stopping is not practised later than the second week in March. The pots are plunged in tan, with a gentle bottom heat. One central support is all that is needed. Greenfly is kept down by fumigation. The plants are removed into a cold house as they are coming into bloom. Fuchias should never be drawn by heat ; they then grow too long jointed.



EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

SARGENT'S EDITION OF DOWNING.—It is not every one who holds a pen for the public, that could have written so gracefully the following notice of Mr. Sargent's new edition of "Downing's Landscape Gardening;" it could have come in fact from no one but N. P. Willis. The *Home Journal* says truly: "The lamented Downing, in leaving to his wife the bequest of fame which is so precious to her—the volume which is the exponent of his genius and labors—left a prophetic foreshadowing of American taste, of which the fulfilments, as they progressively develop, are from time to time to be added, like the lights and shades of a picture left unfinished. To retain its practical and popular value, at least, as a hand-book of rural culture, the successive editions of his 'Landscape Gardening' should be seen to do what they would have done if he had lived—keep pace with the advancements for which he so admirably prepared the way. It will be understood at once, that the worker at such a task, the executor of such a trust of posthumous fame, must be not only a kindred spirit, but one who is skilful in the knowledge of which the book treats, and disinterested in his friendship for those whose inheritance it is.

"A copy of a most beautiful new edition of 'Downing's Landscape Gardening,' is before us, with this duty of love performed to it—a 'supplement' of near one hundred and fifty pages, added by its editor, Henry Winthrop Sargent. . . .

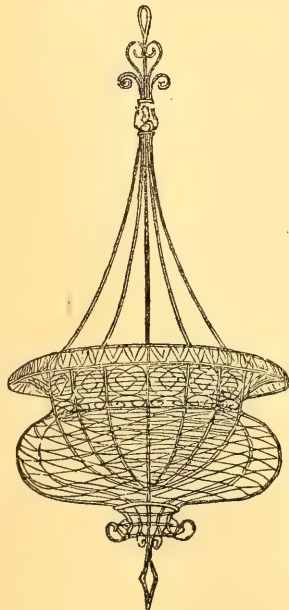
"Mr. Sargent, as many of our readers probably know, has devoted an ample fortune and a life of educated leisure to an amateur pursuit of the art which, with Mr. Downing, was professional. The lack of the most frequent compellent to genius, necessity, has alone prevented a person of his preëminent taste and ability from taking the lead in that, or some other of the arts, before this. At his magnificent residence of Wodenethe, however, (opposite the Highlands, on the Hudson,) he has created a paradise around him, by a most successful appliance of his gifts and means to the perfecting of a fine country estate, and to the experiments of horticulture and arboriculture—taking one branch of the latter art as his more particular study, viz.: the culture of evergreens. A highly finished steel engraving gives the reader of the present volume an idea of the beauty of the mansion and lawn of Wodenethe, and several wood cuts present views of the landscape-gardening effects, and of the rare trees in the nurture of which he has been successful. Intimate with Mr. Downing, while living, and possessing this habitual sympathy of pursuit, Mr. Sargent was better qualified than any other friend to undertake the careful editing of a new edition; and this he most promptly and generously undertook, and has most admirably accomplished. It is a voluntary enriching of the widow's bequest, for which, aside from the especial merit of his work, he will possess an honored place in the calendar of memorable friendships."

OBSERVATORY OF ART AND SCIENCE.—The Bostonians, with their vigor and foresight, are projecting a grand institution to be called the Observatory of Art and Science, on a piece of land belonging to the commonwealth of Massachusetts, now useless, but capable of being made ornamental, healthful and useful, where exhibitions and museums may be located to teach and to improve the public taste. Success to the effort.

ROSES.—*The George Peabody rose*, Mr. Buist says in his new catalogue, promises to be a leading feature amongst Bourbon roses; it originated with Mr. Pentland, of Baltimore. A beautiful bloom of this rose ornaments our "table" as we close.

"To grow roses in perfection," says Mr. B., "they must have a rich, generous soil, with a dry sub-soil, and in nature friable in all weathers; a very liberal supply of decomposed manure when they are most dormant, well forked in amongst their roots, and when in a growing state, frequent (once a week) waterings with weak manure water: rich waterings, however, may be dispensed with if the ground is deep and enriched every season."

"Hybrid perpetual roses," Mr. B. continues, "are the *par excellence* of the whole tribe. If we were to be confined to any group, we would prefer this for its luxuriant green foliage, strong growth, all shades of color from white to purple crimson, rich and grateful odor, and great hardihood; they can be kept by culture as dwarfs, pillars, or standards; they can be pruned to within a foot of the ground, or thinned out and made into pillars; they are adapted to cover walls or fences, trellis work or arbors. Where is there a blush rose to compare with *Caroline de Sansal*, or a pink like *Auguste Mie*, and dark crimsons like *Lord Raglan* or *Prince Leon*, light crimsons like *Jules Margottin* and *Madam Fremion*, and such scarlets as *General Jacqueminot* and *Giant of the Battle*? Indeed, there is no other section of the rose so rich and constant in beauty: they are for the million, and can be grown in all climates and in all soils where there is sufficient stimulant to promote great growth.



MOSS ROSES.—The Moss roses are all of a very hardy nature, and bear a degree of cold equal to 20° below zero, without protection. They do not, however, bear so severe pruning in this climate as they do in Europe. We have often than once had a part of our own stock divested of all their blooming shoots in our absence, merely because "that's the way we do in Europe." Keep the shoots thin, and allow all the plants, if possible, to reach three feet above the ground. Some of them make fine pillars, such as *Adelaide*, *Wm. Lobb*, and *Alice Leroy*. Not a few of them, however, are miserably poor in regard to their mossy character, and even size, color, and shape of flower.

We do earnestly impress upon purchasers that a small plant established in a pot is much better for transporting than a plant from the ground, whatever may be its size.

Some of our readers will remember that it is about twenty years since we, when on the subject of the rose, predicted a perpetual blooming moss. We now cheerfully offer *Salet*, or *Alfred de Dalmas*, as the subjects.—*Buist's Catalogue*.

A HANGING BASKET, suitable for the drawing-room or piazza, is represented by the accompanying cut. It is made of wire, and any one accustomed to work in that material may imitate the example here given.

MR. EDITOR:—Will you say to some of our eastern book-makers, to give the *lists* of fruits adapted to this region a place in their volumes?

We are struggling hard to bring the subject of pomology into proper consideration before the people of the north-west, and some signs of life and activity are beginning to manifest themselves.

Yours,

PUBS. "HERALD" AND "FRUIT CULTURIST."

Wisconsin.

We are pleased with this indication of attention to a subject that deserves more care than it has yet received. Each section of country must have its local information; it is time lost to endeavor to enforce lists of fruits as adapted to all parts of our great varieties of climate, and aspect, and soil. From the labors of local societies, and individual exertions, must come our results. Heretofore a few positions in this country have given the law of the land. We do not blame the authors of this so much as we regret that they alone should have taken the lead in the way of their own interest. Now that the information we have collected is diffused abroad, and intelligent cultivators are taking up the topic everywhere, light will be more diffused, and dependence upon single climates will be ignored. In this direction we are pleased to notice new efforts; among these is the "South-Western Culturist," mentioned in our list of "catalogues received," by N. C. Goldsmith, of Lancaster, Wisconsin, who goes into the subject of fruits for that important region with a zeal and knowledge that must produce good. In the Grant County *Herald*, Lancaster, Wisconsin, we also notice that attention is drawn to the subject, and we wish all success to every similar movement.

In the same paper, we find the following in a communication on the subject of pruning:

"I have delayed sending this a few days, hoping to get time to offer a few thoughts upon the deleterious effect of trimming apple-trees to get the top up higher than a horse's back, so as to plough under them. Many a tree gets its death wound by trimming off large limbs, and at the wrong season of the year. There is nothing to be gained by such a course. It retards their growth; they do not bear as soon; violent winds are more apt to turn them out by the roots or break them down; fruit is more apt to be blown off before ripe, and if it should remain on until ripe, not so convenient gathering it. But the greatest objection to the plan of trimming up so high is, it renders them more liable to be killed by hard winters. And for a handsome tree, give me one with a trunk two feet long.

I have a few long-shanked trees left in my orchard yet, that I planted out before I knew any better; but they are dying every year, and when they are gone I shall replace them with low ones, and never be guilty of setting such again.

B. F. YOUNG.

The *South-Western Culturist* says of dwarfs: "We unhesitatingly advise all to avoid dwarf trees, unless they wish to experiment with something that may never yield fruit enough to pay for planting. Within a few years past, millions of the various dwarfed trees have been raised and sold; and yet it is doubtful whether any person into whose hands this little volume may fall, knows of a single instance in which any considerable number of them, taken together, ever paid cost.

"It now begins to be admitted that they make sickly, short-lived trees, and poor bearers. These remarks apply especially to dwarfed pears."

NO MORE MOWING FOR LAWNS!—From several sources, including our London correspondent, we have received accounts of a perfect substitute for grass lawns in gardens, &c., which requires no mowing. Think of your lawn always green, and the growth removed by the gentlest motion of a wing or brush! Why, it is exactly what we all want; the ladies may now *fan away* what the laborious mower took so much trouble to destroy! It may be as well, however, only to anticipate that it is adapted to small lawns.

The best account of this new plant we find in the *London Horticultural Cabinet*, communicated by E. G. Henderson & Son, Nurserymen, St. John's Wood, and as it is important if true, here it is entire: "Spergula Piliifera, the plant in question, in its style of growth is a neat, dwarf hardy perennial tufted alpine plant, forming close compact wiry grass-like stems, from a quarter to half an inch in height, at first erect, afterwards decumbent, clothed with closely-set

green bristle-like leaves, which, by permanent growth and occasional rolling, form an unbroken, level, velvet-like surface of the richest conceivable verdure, remaining uninjured in severe drought or intense cold, and assuming the same beautiful verdurous tint during the winter months as in summer. The seedling plant of this highly interesting object, starts into growth with a single unbranched perpendicular radicle or root, and afterwards manifests a remarkable power of extension in its ramifying hair-like roots, penetrating to the depth of one to two feet; a fact quite sufficient to account for its enduring the opposite extremes of severe heat and cold. In addition to its hardiness, under the vicissitudes of an English climate, its value is considerably enhanced in its adaptation to all the varieties of common garden soil, requiring but a thin firm surface stratum of one inch ordinary sifted or broken loam. Maintaining its verdant freshness alike beneath storm and sunshine, it combines every needful feature of adaptation with economy, and a uniform aspect of neatness with the least possible care or attention. Its fertility in bloom during the month of July is equally beautiful, being at that period studded over with myriads of low compact salver-shaped snow-white blossoms, appearing not as in fancy, but in reality, the living picture of an emerald-green velvet carpet, spangled with innumerable silver stars. From the preceding remarks, it will be seen that the established growth of this plant maintains a dwarf close web of green verdure, and entirely dispenses with the extra toil and expense of mowing; its numerous small brittle flower-scapes being removed by the gentlest movement of a wing or brush over the surface of the lawn, either whilst in bloom or afterwards, and these constitute the only surface-growth, or tokens of its beauty, which require this operation but once a year. For small or medium-sized lawns, terraces, verges, mounds, etc., this remarkably interesting and beautiful little plant offers an object of great interest to every lover of gardening pursuits, and every lady amateur cultivator may superintend and personally manage the slight attentions required to preserve the terrace margins or velvet lawn in the highest condition. The permanent and uniform condition of dense growth, with the penetrative power of its roots, preserves it from all risks of being parched by extreme exposure in sultry weather, and the progressive accumulation of its moss-like growth gives an elastic pressure to the foot, much softer than the finest Turkey carpet. The seed may be sown either in or out of pots, in the usual method observed for fine seeds, with a slight but uniform covering of soil, and placed within either a frame, cool pit, or greenhouse, using the usual precaution of shading the seed-pans from intense sunlight daily for a few hours, until well germinated, after which it may either be replanted in stores of ten to fifty plants within dishes or large pots, or otherwise planted out in rather a shady border of the open ground for a few weeks, and ultimately transplanted upon the prepared lawn-surface in two or three plants, within one inch or more of each other, and such little plant-groups may be formed at a distance of six, nine, or twelve inches apart; in such positions the growths will progressively meet and form the rich and beautiful surface now described. It is also admirably adapted for picturesque green tufts and edgings on avenue lines and borders, for grouping the front spaces of massive rock work, and surfacing partially raised mounds around classic fountains and basins, or artistic columns, where grass is unavailable for mowing; and equally telling for cultivation in larger vases, in alternate effect with the silvery sheen of the beautiful *Cerastium tomentosum*, on terrace verges and architectural approaches.

A practical proof of the success of *Spergula pilifera* for the objects above stated, may be seen in the gardens of A. Mongredien, Esq., at Forest Hill, Sydenham, Kent; where a rich and verdant plot or lawn has been established four years by Mr. Summers, the intelligent gardener there, and is now in fine condition. In the same gardens, a considerable space is allotted for further illustration of its perfect adaptation, which may be seen on application."

THE PEAR DISCUSSION.—We have several communications still on this subject; from Mr. L. F. Allen replying to Mr. Eaton, Mr. Coppock to Mr. Allen, and so forth. We have endeavored to be impartial during the debate; every one has had his say, and we must reserve our

space for other topics; the good that is to result from the "controversy" cannot be increased by angry discussion. Facts are now all that we want, and the coming season will perhaps let us into some secrets on the subject. The topic has been misunderstood throughout by many, and some who have entered upon it have likewise mistaken the end in view. It was not, whether pears on the dwarf could be cultivated, but whether they could be produced on quince stock to a profit. That question has been, in the opinion of many, put to rest; amateurs will continue the practice, which is more than a hundred years old, but orchardists are now cautious how they invest their means in an experiment so far unsuccessful, as a general thing.

PRUNING.—Single specimens of shrubs on a lawn are frequently allowed to grow tall and unsightly, to the extent of requiring supporting stakes, detracting much from their beauty of form and foliage during summer. As they flower most profusely on the young shoots of the previous year's growth, pruning in winter of course deprives us of the flowers. The time to prune is immediately after the bloom fades in early summer. *Spirea prunifolia* for instance, may be formed into a compact plant by attention to cutting out and shortening back misplaced branches. The Golden Bell, (*Forsythia*), which is now so beautiful, is naturally a spreading plant, having a tendency to send out strong shoots from the base; all plants of this habit should be frequently looked at during growth, and the points of such strong growths pinched off, when about a foot or so in length; by this means they can be formed into fine, massive plants. *Deutzia Scabra* is much improved in beauty of both foliage and flowers, by thinning out most of the old wood, leaving the young growths more space to develop. *Weigela Rosea*, *Spirea Reevesii*, the box-leaved Privet, Mist Bush, &c., are vastly improved by a yearly pruning. The beauty of these plants depends upon their form; the lower branches should spread and meet the grass, so as to hide the stems, and present an appearance of a rounded tuft of vigorous foliage.

In shrubbery borders, where a variety of forms and general massiveness of growth is desired, this care is not so necessary, although a judicious pruning will increase the size and beauty of foliage, and keep the plants in healthful growth.

HEDGES.—It will readily be acknowledged by those who have seen a prairie, that a fence is a matter of the first importance. Commercial parties have been long enforcing the value of the Osage Orange for this purpose, both on the level prairie where wood is scarce, and for farms everywhere. Success has attended some efforts to this end, but in general the care and attention they require at the busiest season of the farmer, and other causes, have not been universally encouraging, nor do we find on examination that this plant has fully answered the expectations regarding it; indeed, we prognosticated its failure, except in careful hands, long since. It still has its advocates, however, and we would not discourage its cultivation wherever labor and attention can be brought to insure its success.

A new movement has been made in the West for the introduction of a "Live Productive Diamond Hedge," from the French Osier Willow, *Salix purpurea*, of which favorable notices have reached us from several quarters. It is easily propagated, makes longer and larger growths each year than any other hedge plant; the growth is worth six to ten cents a pound for basket willow, making the fence an annual producer which will pay for itself in two years; it is inexpensive, occupies one quarter the amount of land, and does not spread by ploughing the roots; it is beautiful, and useful for the honey-bee, and possesses other recommendations. The sets are placed so as to grow into a diamond shape; tied together, they interlace by growing solidly into a strong fence. Cattle will not browse on them by reason of their bitterness, &c. Thus you may make a profitable fence instead of a costly one. The subject is of great importance, and was first introduced to our notice at the seed store of Emory & Co., in Chicago, where Woodruff & Co.'s pamphlet may be had gratis, and where we observed specimens of the hedge itself at their commercial warehouse.

THE MICROSCOPE.—A valuable work called the "Microscopist's Companion; a Popular Manual of Practical Microscopy," by John A. King, M.D., is in the press at Cincinnati. From

a specimen sheet and engravings we augur favorably for the work. Microscopes of excellent quality are manufactured in this country at a cheaper rate than those of Europe, rendering us in another branch of the arts independent of foreigners; and as the instrument is of increasing importance and popularity, the demand will for a long time equal the supply. The microscope in skilful hands has done much for knowledge in vegetable physiology; it is yet to do much more.

DISCURSIVE POULTRY PAPER.—Did any of our readers ever notice the beautiful, active little dogs, carried or led by strange looking men, half grooms, half keepers, in the Quadrant. Smart, clean, active little animals. When put on the ground, to show to the old lady who has stopped her carriage to look at them, they jump and frisk about. None of our readers ever visited a rat-pit in the "Dials," where a dog not much larger than the rats themselves, kills them against time. If they had, they would see condition the result of moderate and judicious feeding. Now, the old lady we have just mentioned bought one of these beautiful little dogs, which soon after might be seen on the front seat of the same carriage, a fat, sleepy, wheezy, ungainly mass of flesh. Poor little thing! it has been "taken care of," and has been "kindly treated!"

"Lucky for it," says the old lady; "it is always ill, and it would have died if that man had kept it. He starved it! Look! Miss Jenkins, it will not eat a piece of the white meat of the chicken, without butter. Its appetite is so bad; and when it came I was afraid to feed it; it used to jump so at the food, I thought it would bite me. It has a nice little bed, and, in the winter, nice thick blankets; but it is very poorly, and takes no notice of anything."

The truth is, pets of all kinds (we are afraid we may sometimes class children with them) are "killed with kindness."

A London family takes a house in the country. Most people prefer that which they have not, and as, in London, there were no fowls to feed and look after, that was one of the anticipated pleasures. Some must be bought, and there is a large farmer in the neighborhood greatly renowned for his poultry. Our friends are hardly settled,—half the things are not unpacked,—when a morning is devoted to a walk or ride, to ask him to be good enough to let them have a set. "What a beautiful sight the yard presented! What plumage! What ruddy combs and gills! But could they not see them nearer?"—"Oh, yes."

The appearance of a basket, and a few grains scattered about, brought them all up, and then the questions,— "How often do you feed?" "When do they roost?" "What makes them so hungry?"

The pen was purchased. "Ah!" said the young ladies, as they rode home; "the fowls have made a good exchange. We will take more care of them than that."

Well, the fowls came home, and were put into the house where they are to roost, with plenty of food. There was plenty—enough for a week. They are let out in the morning, and will not eat the barley. It is supposed they do not like it. "Try something else: give them some bread." They pick only a few crumbs. "Well, leave it on the ground, and they will feed when hungry." Day after day goes on, and the anticipated pleasure is not realized. The fowls are dull, careless of food, are fed twice as well as they ever were, and only get worse.

A friend suggests that a trough shall be provided where they can feed when they like. It is done, and it stands in the yard full of barley. The birds go to it sometimes, take a mouthful or two, and then rush to the water, where they drink greedily.

The birds are evidently going back, and it is necessary to call a council, and hold a consultation as to what shall be done with the tiresome fowls. The only member of the establishment who is an authority, is an odd man—half gardener, half servant, who lived with the former owner of the house. He is consulted:—

"Did his former master keep fowls?"—"Yes." "What breed?"—"Don't know, he was not particular." "Were they ever ill?"—"Never." "Did he take much care of them?"—

"No, none." "Did he feed them much?"—"No." "Did they lay then?"—"Oh, yes! well." "Did he know any one who understood fowls?"—"Yes, Mr. Taplin."

Mr. Taplin is one of a very useful class. An active, well-informed country gentleman, of small fortune. He possesses a knowledge of gardening; he is a good judge of a horse or a dog; and an authority on pigs, poultry, and cows. He has good taste in laying out a garden. He has good taste in another way—he does not intrude all these subjects when in the society of ladies, but waits till his opinion is asked. He is an indispensable man to a London family settling in the country, and just now is talking to the head of the family in the kitchen garden. His advice is asked. There is a quiet, hamorous smile, or curl, about his mouth, while he draws from his young querist the history of all she has done for her new pets; and when she winds up by saying, "It is so provoking, that the birds looked so well when they were neglected, and now fell off when they were well attended to," he heartily, but not rudely laughed. Seeing some little dismay and chagrin on the young lady's countenance, he apologized for doing so, and saying her father was coming over to see his kitchen garden, he invited her to see his poultry.

Everything was correct about his place. Most beautiful Dorkings were running in the yard. Cochins were in a pen looking into a small orchard. Sebright Bantams were in another. All were in startling condition. The young lady sighed as she mentally compared these birds with her own. These were so bright, so healthy, and so hungry. Had they been her own, she would have been delighted to see them all rush after a few grains that were thrown down. Having found it was feeding-time, she waited to see in what way it would be done. Mr. Taplin was provided with a small tub of slacked meal. "Was that all he was going to give to thirty fowls?"—"Yes; and they would not have all of it." He took a small piece in his hand, and threw it down, not at his feet, but a long way from him. Such a running and scrambling for the morsels as the little lump broke and scattered about. When all was eaten, then another lot was thrown down. There was the same struggle for it. But after a few more, the anxiety had ceased, and they pecked leisurely. No more was given. "Surely," said the young lady, "that is not enough."—"Plenty," was the answer. "If they want more they must find it."

True enough: they were now seen dividing into little parties, and seeking—some the shrubbery, others the orchard; but all seemed satisfied. "But the poor birds in the pens, surely they had more?"—"No; only as much as they will run after."—"Yet how well they looked."—"And where do these beautiful birds roost?"—"Come and see."

In a corner of the yard is an old woodhouse. It is boarded, and the boards are cracked and open in places. It is very lofty, and well thatched. The floor of this house is covered with bright red gravel: the under layer is also gravel, well trodden and rammed down. The surface is scrupulously clean. The perches are only two feet from the ground, and are movable, for convenience of cleaning out. It does not look smart enough for our young friend: she looks at it contemptuously, and peers about for something she cannot find.—"What is it?"—"Where is their food?"—"What food?"—"For them before they are let out."—"They have none."—*London Poultry Chronicle.*

CATALOGUES, &C., RECEIVED.—Butler & McCulloch's Spring Catalogue of Choice Flower, Shrub, and Tree Seeds, Covent Garden Market, London.

R. Buist's Catalogue of Select Roses; Rosedale Nurseries, and 922 Market St., Philadelphia. An admirable manual, embracing all the varieties, modes of culture, &c., &c.

Catalogue of Fruit and Ornamental Trees, Shrubs, Evergreens, &c., at the Willow Creek Nursery, Lee Co., Illinois; C. E. Bacon, proprietor.

Catalogue of Small Fruits. Jeremiah Knox, Box 478, Pittsburg, Penn. Very full.

Catalogue des Plantes, Exotiques cultivées dans les serres, de J. Linden, a Bruxelles.

A Treatise on the History and Utility of Live Fencing. By C. R. Overman, of Bloomington, Ill. Third edition; and in favor of the Osage Orange.

List of Plants for sale by John W. Adams, Portland, Maine. Ditto Fruit and Ornamental Trees, New Grapes, Roses, &c. Good, and reasonable prices.

E. Woodruff & Co.'s, Live Productive Diamond Hedge, from the French Osier Willow, (*Salix purpurea*). Contains a very valuable suggestion for willow fences.

Descriptive List of Apples cultivated by Overman & Mann, near Bloomington, Ill.

What May be Learned from a Tree, by Harlan Coultas, No. 2. A very ingenious treatise now in the course of publication, in numbers, at 25 cents each, by the author, Philadelphia.

South-Western Wisconsin Fruit Culturist, containing directions for the culture of fruits adapted to Wisconsin, by N. C. Goldsmith. Also catalogue of trees and shrubs cultivated at the Lancaster nursery. A movement in the right direction.

Wholesale Catalogue of Lake Erie Nursery, East Rockport, Ohio, Lewis Nicholson, proprietor.

Bridgeman's Descriptive Catalogue, No. 6. Select Bedding Plants, Roses, Summer and Autumn Blooming Bulbs and Herbaceous Plants, 1859. Andrew Bridgeman, 878 Broadway, N. Y. No one can visit this establishment without being struck by its adaptability to a luxurious city and fashionable neighborhood, where everything is ready at a moment's notice.

Views of the Vine-Growing Resources of St. Louis and Adjacent Counties of Missouri. By Charles H. Haven, of Melrose, St. Louis Co., St. Louis. There is in St. Louis a wine association which is ready to give high prices for any amount of grapes that may be offered, and minor associations for planting vines are forming, we doubt not to advantage. The pamphlet is an excellent one.

Stratham Nurseries; 100,000 valuable Fruit and Ornamental Trees. Andrew Wiggin, Stratham, N. H. With greenhouse plants in great variety.

Catalogue of Trees, &c., &c., for sale by Ed. Bonsall, Jr., near Salem, Columbiana co., Ohio.

Meehan's Germantown Nurseries, No. 1; Ornamental Trees, Shrubs, and Vines. A good and various stock.

Meteorological Journal, No. 20, Muscadine, Iowa, for 1858, by T. S. Parvin, Smithsonian Observer. *Material pour servir.*

Seventh Annual Review of the Trade and Commerce of the city of Chicago. Chicago, 1859.

Select Descriptive Catalogue of the Kentucky Nurseries, Maysville, Kentucky, George G. Curtis & Co. This is an excellent catalogue of an extensive variety of the best stock; we have but one objection to make to it; the printer has misspelled in a variety of instances; Larva is called larvy, Dielytra is Dilitra, &c.

Trade List of Fruit and Ornamental Trees, 1859, for sale by George D. Kimber, Flushing, L. I.

Catalogue of John C. Teas, Maysville, Indiana; Fruit Trees, Shrubs, and Evergreens.

ANSWERS TO CORRESPONDENTS.

T. T. A.—There is a Passion flower the root of which is hardy, in the Middle, and perhaps in the Northern States. Planted in a southern aspect, we have flowers from it every season. Procure it by all means.

DANIEL BARKER.—Your efforts to produce American varieties of greenhouse and bedding plants are not unnoticed or unappreciated. You will have accomplished much if you render us independent in this respect, and beyond a doubt your productions will be better adapted to our climate than those originated abroad. Your Cinerarias have never been exceeded, and we trust encouragement will reward your laudable efforts.

B. LOSSEE, COBURG, C. W.—Yes: we have a very kindly feeling for Canada, and rejoice in her horticultural success. Send us a figure and description of the St. Lawrence Apple. Seed of the American Holly can be procured of most seedsmen. The Tulip-tree does not

bear very young. The cultivation or raising of shellbark hickory we have published in the journal and in "Michaux's Sylva." The tree should be cultivated both for beauty and fruit.

H. S. BOLTON.—We must refer you to the hand-book on cranberry culture, published in New York.

SELINA.—The connoisseur of roses must not expect too much the first and second year of planting, because until the roots have firm hold of the ground, the plant will not have strength to continue its growth and bloom uninterruptedly. When, however, they fairly root into the soil,—and that agrees with them,—they will rarely be without flowers until the frost cuts them off. Glad you have got so good a selection of standards, which with us are highly satisfactory with ordinary care.

JAS. P. MERRIAM.—There is no Muscat Catawba. The advertisement was a swindle, and we trust not successful.

There is a new grape, the Muscat Hamburgh, of which we shall have something to say soon. Olive. In the winter. See our former notice.

MEMBER OF THE WORKINGMAN'S INSTITUTION OF NEW HARMONY, INDIANA.—All the plants named should be employed as bushes or shrubs. See a notice in another column in regard to trimming all such.

Gossip.

HARDINESS OF PETUNIAS.—It may not be uninteresting to know, that under proper treatment many plants may be made to endure more cold than most people imagine. I have several things illustrative of this, but that which I consider the most striking is a "Shrubland rose" Petunia, of which I send examples. This has stood two summers and last winter against the wall of my dwelling-house, and seems in a fair way to stand this winter. It has never received the slightest protection of any kind, except the wall against which it is nailed.—*F. J., Faringdon, Berks, Jan. 5.*

FLOWER-POT DRAINAGE.—I beg to suggest the use of perforated of earthenware cylinders instead of potsherds, stones, &c., for this purpose. These, if merely covered with a thin layer of moss, fibrous-rooted peat, or charcoal, would, doubtless, answer admirably.—*A. B. C.*

RENDERING BARREN FRUIT TREES FERTILE.—It fell to my lot some ten years ago to take charge of some barren old pear-trees, with long spurs full of cankers. Although I took a different course from the one you have lately been advocating to render them fertile, I have the satisfaction of observing that all the old stocks are well filled with bearing wood. The horizontal branches were all cut off, and a graft or two put on the stumps or short arms, except in some places where buds were inserted and allowed to replace the branch; those put on in the shape of buds make less wood than the others, but are very productive. The trees first grafted have nearly covered the walls; they bore fruit freely on the second year's growth, and the year after the produce became greater. I allude to this to show that it would have been a mistake, where there is a great consumption of winter fruit, to have torn up the old trees and planted young ones. In the latter case I should have had to wait long and patiently for the first fruit bud, (unless root-pruning had been resorted to), while now I have plenty of growth and abundance of fruit. I think grafted trees will continue longer in bearing

than if buds had been inserted in branches. I may mention another fact not a little interesting. Last spring a Barbarossa vine produced bunches somewhat irregularly, leaving more space without fruit than I liked to see. I took a shoot from its neighbor, a Hamburg, with a bunch just coming into flower, inarched it, and put a small bottle of water to the end of it. This was done merely as an experiment, but to my astonishment every flower became a berry. The bunch progressed, and was to every one here a curiosity; it colored well, and became a compact little bunch in September.—*Thorp Perrow, in Gardeners' Chronicle.*

PLINY has recorded the story of an industrious and ingenious husbandman, who, being in advance of the knowledge of his time, cultivated a small piece of ground upon an improved method, by which he gathered much more fruits and reaped larger profits than the neighbors about him, though their possessions were more ample. His uncommon success excited their envy, insomuch that they brought this accusation against him: "That, by sorcery, charms and witchcraft, he had transported his neighbors' fruits, fertility and increase to his own fields." For this he was ordered peremptorily, by Albinus, a Roman general skilled in agriculture, to answer the charge before him. Cresinus, fearing the issue, resolved upon his best defence,—brought his plow and other rural implements, and displaying them openly, he set there also his daughter, a lusty, strong lass, big of bone; then, turning to the citizens: "My masters," quoth he, "these are the sorceries, charms, and all the enchantments that I use. I might also allege my own travel and labors, my early rising and late sitting up, and the painful sweat that I daily endure; but I am not able to present these to your view, nor to bring them with me into this assembly." This bold and open defence captivated the people; it proved the *coup de main* which turned a doubtful result to his entire favor; he was pronounced "not guilty," and those present took note of his inventions. This story is derived from those who are said to have first taught to the Britons the arts of husbandry. It may, therefore, be fairly employed to show that the first improvers of agriculture had their days of trial; that in all ages and countries, and in every path of inquiry and invention—in the discovery of the rotation of crops, as in that of the rotatory motion of the earth—a Galileo has had to answer for his daring before some embodiment of ignorance constituting an Inquisition.

It has been lately discussed with some interest, whether the Romans possessed forcing contrivances, a subject about which there is some difference of opinion. That they did employ some kind of artificial aid is sufficiently proved by some well-known expressions in Martial, the most remarkable of which (lib. viii. ep. 68) tells how the Vine remains in felicity, enclosed in the transparent *gemma*, where no rigors of frost can touch its berries; and seen like the female figure through her muslin drapery, or the pebble beneath the limpid stream. That some kind of transparent material was used by the Roman gardeners, under the name of *specularia*, is therefore certain, whatever the material may have been. Seneca calls it *testa*, which is translated shell; but which may have been, a tile of talc, the *lapis specularis* of Pliny, which he tells us the Romans obtained abundantly from Spain. These specularia would seem to have been a kind of handglass, possibly tall transparent movable frames, such as may be seen in some of the Botanic Gardens on the Continent. The curious account given by Columella of Roman Cucumber growing, is hardly intelligible upon any other supposition. "He who wishes," he says, "to have the fruit of the Cucumber before its season, should, after the winter is over, introduce well-manured soil into baskets and slightly water it. Then, when the seeds have come up, on warm and sunny days he should place them in the open air near his house, so as to shelter them from all cold blasts. But in cold and windy weather he should bring them under cover, and continue this position until the vernal equinox. He should let the baskets altogether into the ground, and he will thus obtain a precocious fruit. Wheels also may, if it be thought worth while, be placed under the larger vessels, in order that they may be drawn backwards and forwards with less labor. But in any case they must be covered with *specularia*, that even in calm but cold days they may be safely brought out into the sun. It

was in this way that Tiberius Cæsar got Cucumbers almost all the year round." The learned Dr. Daubeny concludes, from an examination of all the evidence obtainable, that Roman forcing did not go beyond the production of early Cucumbers and perhaps Melons, and a supply of winter Roses.

EDUCATION FOR RUSTICS.—Gervase Markham, who lived at the commencement of the 17th century, himself a practical husbandman, wrote a work with the object of enlarging the knowledge of the agriculturists of his time, and of "recording the most true and infallible experience of the best husbandmen in the land." He entertained the opinion that to teach farmers reading and writing was a superfluous endeavor. He thought that, "as touching the master of the family himself, learning could be no burthen," but "if we speake as touching some especiall servants in husbandrie, as the bayliffe, the under farmer, or any other ordinary accountant, it is not much materiall whether they be acquainted therewith or no, for there is more trust in an honest score chaulkt on a trencher, than in a cunning written scrowle. And there is more benefit in simple and single numeration in chaulke, than in double multiplication, though in never so faire an hand written!" There are some people even in the present day, it is to be feared, who have faith in the sufficiency of chalk; but what will they say of the following mode of ascertaining the probable state of the corn-market, which belongs to the same order of intelligence, and was put forth by Markham as a well-founded piece of instruction: "If you would know whether corne shall be cheape or deere, take twelve principal graynes of Wheate out of the strengthe of the eare, upon the 1st day of Januarie, and when the harth of your chimney is most hot, sweepe it clene; then make a stranger lay one of those graynes on the harth, then mark it well, and if it leape a little, corne shall be reasonably cheape, but if it leape much, then corne shall be exceeding cheape, but if it lie still and move not, then the price of corne shall stand, and continue still for that moneth; and thus you shall use your twelve graynes the first day of every moneth one after another, that is to say, every moneth one graine, and you shall know the rising and falling of corne in every moneth, all the yeare following."—*Philip's Progress of Agriculture.*

Miscellanea.

TEA CULTURE.—A few days ago I drank a cup of real American tea from the Chinese tea plant, of which Dr. J. P. Barratt, near New Market, South Carolina, has a fine shrub about four feet high, which has borne fruit during several years. By its side was a thrifty specimen of the *Olea fragrans*, or Chinese Olive, with which the tea is scented. The doctor thinks that the tea plant should be renewed about every three years, and if thus cultivated, that it would thrive and be profitable. I was recently at Greenville, in this State, where Junius Smith, some years ago, essayed its culture. I was told that his experiment was by no means a true test. His soil was barren, and he took no pains to improve it. The plants did not receive proper nourishment, and not being used to such treatment they pined and died. The fine shrub which I saw at Dr. B.'s, shows plainly that the tea plant will thrive in this State. S. B. BUCKLEY.

Newbury, South Carolina,—in the Country Gentleman.

WISCONSIN CRANBERRY TRADE.—There are extensive cranberry-fields in Wisconsin, which yield the berries for the picking. Juneau county is famous for its cranberry crop, and the quantity sold the past season in the town of New Lisbon alone, is 28,000 bushels, at the average price of \$1 75 per bushel. The trade brought some \$55,000 to the town, and not less than 5,000 persons were engaged in harvesting and preparing the berries for market. The Juneau *Argus* says the cranberry crop was a far greater benefit than the most abundant wheat harvest could have been.—*Cincinnati.*

NERINE FOTHERGILLI.—Of this beautiful tribe of plants much has been said, and the great beauty of the far-famed Guernsey Lily is a recognized fact, but it has sunk into comparative insignificance by *Nerine Fothergilli* and *vanusta*. The vivid vermillion of the one is exquisitely beautiful; whilst the last, when contrasted with the original, is a larger flower and of a much more brilliant rose-color—the flowers have the appearance of being spangled all over with gold dust when the sun shines upon them. The varieties all thrive well in a light sandy loam, and require encouragement and protection during the winter months, with an abundance of air, so as to perfect the development of their foliage.—*A. H., in Turner's Florist.*

"Lancaster, Wisconsin," says the *South-Western Culturist*, "alone, pays annually over a thousand dollars for green, and half as much more for dried apples, and an untold amount for cider and vinegar—to say nothing of other fruits consumed, most of which come from the States named; by which some idea may be obtained of what the villages and towns of this region altogether pay for fruit.

These fruits cost the consumer double or quadruple what they would if raised at home, because the speculator that buys up the article on the field of growth, the transportation companies, perhaps two or three wholesale and a retail dealer, must all realize their profit thereon, before these indispensable luxuries reach the table or palate of the masses in this vicinity. Two dollars per bushel is about the usual figure apples cost the dealer here, including freight during winter and spring. The orchardist in Grant county realizes over \$1 00 per bushel for his poorest apples made into cider at the usual selling rates."

STRAWBERRIES.—Mr. Edwards, of Bureau county, grows 100 bushels of strawberries per acre, cultivated as cheaply as an acre of corn. Dr. Pennington, of Rock river, grew in 1855 \$6,000 worth of apples in an orchard of ten acres, the trees from eight to fifteen years old.—*Allen's Lena (Ill.) Catalogue.*

QUINCES.—Observation and inquiry lead us to the conclusion that the quince *cannot be successfully cultivated in the West.*—*South-Western Culturist.*

Correspondence.

Our Chicago Correspondence.

DEAR HORTICULTURIST:—That remarkable individual Mr. Richard Swiveller, in his flip-pant manner, when he goes to ask after the health of an old gentleman, enquires after the "ancient buffalo!" So it is that we distort matters till truth is scarcely distinguished. Had Mr. Swiveller travelled to Chicago he would have probably described it as the prairie-hen city, or distorted it by some expletive. I shall do no such thing, but shall inform you that a discovery has been made to which I attach some importance. At the North or East,—which is it?—the people are all laboring for pelf enough to retire to the country; but "the country" they so long for, rises in price so rapidly, that before their accumulations reach the maximum of their wishes, country places near by have become too dear. What are they to do, unless they content themselves with only an acre or two? I answer, *Move to the prairies!* It has been found out, notwithstanding the anathemas of travellers who view surfaces only at railroad speed, that a prairie may become a paradise; land is cheap enough yet to allow many acres to be purchased for half the price of a lot 25 by 80 in New York, Boston, or Philadelphia.

West of Chicago you come directly on to prairie land, possessing more, perhaps, than the ordinary disadvantages of such a country, and in March and April it is sad enough to see the small dwelling-houses surrounded by a mixture of black mud and water. The frost once out, however, there ensues a season of great beauty—the earth covered with flowers, roads solid,

and food for man and beast in plenty; a deep soil, in fact, which will repay labor a thousand fold. Endure this mud for a few weeks, and what neighborhood is without it? you have in a western prairie a home that the European who works *hard* for all he eats, might be proud of. But a country seat on the prairies! with *all* the appurtenances of refined life! this is an unexpected discovery made by myself, though doubtless many have seen such while I was hugging home; as it was a surprise, indulge me with the telling of it.

Encouraged to the long journey—more than one-third as far off as Liverpool, I found myself in thirty-eight hours in the Garden City of Chicago. Taking the Galena cars, in an hour I was at Cottage Hill and in the carriage of Thomas B. Bryan, Esq., *en route* for his representative place. Though the station is named a Hill, it required more than one look to ascertain the wherefore; gradually it was revealed that there was a considerable elevation, but it all seemed at first alike to the eye; the house appeared to abut into the level, and it does join the prairie by imperceptible degrees. The cluck of the prairie chickens is distinctly heard morning and evening from the windows and piazzas, and good shooting may be enjoyed from the purlieus of the kitchen garden. We are much influenced by what we have read; the poets have been educating us with the love of the heather, and have made the nightingale and whippoorwill household thoughts; who shall say that when the song about the prairie grass and the prairie birds has been as well and as long sung, we shall not admire and poetise them as much; there is plenty of heather land in Scotland not half so desirable as you will find on the level grounds of the West.

Mr. Bryan, after eminent success in business, and still young, has purchased the site of Cottage Hill, and built an eminently comfortable mansion, near enough to the station for convenience, and yet far enough from it to have none of its annoyances. Not a single tree, to begin with, but in place of that he has an unobscured view for thirty miles towards the setting sun. By removing large trees with frozen balls, and importing a few thousand evergreens, the scene is in course of transformation; shelter is provided, and our friend is rejoicing in the prospect of soon seeing his large domain blossoming like the rose, and its advantages appreciated.

If such things can be—if a man can in an hour or two divest himself of cities, and purchase rich land cheaply, and surround himself with beauty, and have a mail twice a day to communicate with the world—if in two or three hours he may reach ten or twenty dollar land, and purchase his lumber for a trifle—why—pray tell us why, we should toil to the end of a long life, sighing all the while for the country? You ask for views; on the slightest eminence in Illinois your views are literally unobstructed, except by distance. Mr. B. has already in two years' labor planted and adorned a scene of great beauty; and we must confess our repugnance to the prairie is much obliterated, when we enter drawing-rooms worthy of any city, and find refinements such as only the educated can enjoy.

Neighborhood is also at hand. Mr. Healy, the eminent painter, with his numerous and charming family, and others, are within a short walk: when I say our host is never at a loss for a partner for indoor exercise at billiards, I have depicted a home where more particulars would be an intrusion. Thus much, however, was necessary to introduce our representative gentleman; it may serve as a new idea of what the houses in the West are becoming; I rejoice to chronicle so good a beginning, and to learn that Cottage Hill is a promising place.

In another direction, on the lake towards Milwaukee, and also within an hour of railroad travel from the city, is Evanston, on a wooded bluff of great beauty, where quite a town of importance has grown up, with endowed schools (a great feature of this region) and learned professors; among them Dr. T. V. Blaney, of Delaware, who stands very high as a lecturer and chemist. On the same road and but six miles from Chicago, they are now establishing a rural cemetery, (Rose Hill,) on high land, once no doubt the shore of the lake, and with a soil and timber admirably adapted to its purposed occupation. I predict that this cemetery will become one of the greatest boasts of Chicago.

At different points, too, are other improving rural towns; conspicuous among them is Hyde Park, with fine views, trees, and much proposed landscape gardening. Horticulture has made a brave start in Chicago; there are many clever greenhouses and graperies, and a gardeners' society, which meets and holds able discussions. Your readers have already made acquaintance with Jno. C. Ure, gardener to the Hon. Mr. Arnold, through his communications.

The whole city has been newly graded, leaving the blocks of houses below the level of the streets three to four feet. The manner in which these great brick structures, about as heavy as the Astor House, are being "screwed up" into the air is a marvel to foreigners. Nobody seems to notice what is going on; the inmates carry on business, and even a clock and watch store was apparently insensible to the motion. The result, is very dirty streets from the excavations necessary to blocking up.

If Chicago has grown rapidly, and has felt the pressure of the money panic and a bad crop somewhat sensibly, her merchants are in good heart, and disposed to believe the worst is over and prosperity near. To this I say, amen.

J. J. S.

Chicago, April, 1859.

The Hop Tree, *Ptelia Trifoliata*, is the only American species that I have seen noticed by botanists. This species of the hop has long been known and cultivated as an ornamental shade tree, and has been for sale in most of the nurseries for many years; but its utility, and superiority over the common hops, have not until recently been known and acknowledged, and adds very much to its value.

The foliage is in long trifolia, pendant leaves of a beautiful pea-green. Starts late in the season but quite rapidly, and almost immediately follows the beautiful blossoms in clusters— which very much resemble the Privet blossom. They soon change into clusters of seeds or hops, which makes them highly ornamental. The only fault in its growth is a tendency to throw up a long slim body, which robs it of its beauty, unless cut back to make it throw out its limbs nearer the ground. It is not a very fast grower, but produces seed at two or three years growth. I have never known of their growing over twenty or twenty-five feet, and when grown will produce a bushel or more of hops.

How profitably they can be raised for a field crop, I am not able to say; but as they are very much stronger for yeast, brewing, &c., and 640 trees can be planted on an acre, at an average of half a bushel to a tree, 320 bushels, I think it will pay for making a trial.

Samples of the hop, with circular, will be forwarded through the mail by enclosing five letter stamps.

F. TROWBRIDGE.

New Haven, Conn.

MR. EDITOR:—In the April number of the *Horticulturist*, page 187, you ask what grape Major Le Conte alludes to in the New Patent Office Report, where he speaks of a white-fruited grape as the best of all varieties, &c. The Major can undoubtedly answer the question. But it occurred to me in reading the passage, that he had reference to a grape which I have cultivated for many years. The description is almost perfect. This grape I found in the garden of the late Jacob Perkins, of this town, nearly twenty years ago, and hence we have named it the "Perkins Grape." He obtained the vine for an Isabella, taking it from a garden where the Isabella and Catawba grew together; but when it fruited, he found it to be light-colored, though resembling the Isabella in shape and size, but full three weeks earlier. The vine is a rapid grower, very hardy and productive. I planted a few cuttings in my garden when I first became acquainted with the vine, and it has answered my highest expectations. As I never had the grape fever, I said but little about it. But when my neighbors saw the vine burdened with the fruit, and especially when they tasted it, they immediately applied for vines. I have, therefore, the few years past, disseminated it freely and widely in this region, and where known, it is more anxiously sought for than any other native grape. "The racemes are large, long, and dense; the berries oval, white or green, with a slight coppery tinge on the

side exposed to the sun." It is sweet and luscious, with a musky flavor. It was supposed by some to be an accidental hybrid between the Isabella and Catawba; but I am convinced it is a Fox grape of the very best sort, and probably sprang from a seed dropped by some bird, that brought it from a distance, as no other wild grape has been found to resemble it in this vicinity.

E. GAY.

Bridgewater, Mass.

[Not likely to be the grape suggested by Major Le Conte, in the Patent Office Report. The seed dropped would not produce *the same* grape. The white Fox grape is rare.—ED.]

WHAT'S IN A NAME.

Shakes-pear.

Beurré de Kuckingheim! Brown Beurré!
 'Tis a wonderful jargon, yes sir-ree!
 Fits to utter, and cramps to spell,
 Dutch, English and French in a Jargonelle!

Doyenné d'Alencon d'Hiver gris!
 Van Mons Leon le Clerc! dear me!
 Bless the branches and save the root,
 If all that "talking" should turn to fruit!

Elect me king, and I'll make a law]
 Entitled "an act for your lower jaw:"
 Syllables two shall name a tree,
 And the pear shall perish that carries three.

Proudly then shall our pyramids grow!
 Straight and taper and full of blow!
 Crack, nor canker, nor blot, nor blight,
 Frost to hinder, nor bug to bite.

Plump and juicy shall Duchess swell,
 Coral crimson the F. O. relle;
 Iced champagne shall our Jerseys bear,
 And every Seckle shall be a pear.

Flemish Beauty shall spread apace,
 And good St. Michael's grow in Grace;
 The very Diel shall his limbs untwist,
 And go to heaven like an Urbaniste!

Golden days for the orchard, sure!
 Happy times for the amateur!
 When every "Title" shall mean a thing,
 And pears are plenty, and I am king!

T.

Torch Hill, Ga., March 3, 1859.

GREENHOUSES—THEIR TEMPERATURE—SUMMER USE OF.—Before again referring to the summer use of greenhouses, allow me to say a word or two upon the subject of correctly ascertaining the temperature.

In my last article upon this subject (p. 144, No. 3, Vol. 14) I say, I allow "the temperature to rise as high with solar heat as 80°," &c. This has been interpreted to mean,—and by those who should know better,—in the sun's rays. This is a very mistaken idea, and a very common

one. Visitors are frequently surprised, upon an inspection of the thermometer in a southern exposure, at the apparent high temperature. I have noticed that the glass exposed to the sun will register from 10 to 20° higher than the actual temperature of the house. And this latter can only be correctly ascertained by suspending the thermometer in a shady place.

I have seen some of my professional brethren, I regret to say, so unreflecting, to say the least, as to imagine that turning the back of the thermometer to the sun was sufficient; not stopping to think that the black Japan of the case, by attracting the sun's rays, is a fruitful source of error.

A very simple contrivance is the use of a square post, (four to six inch, which may be made ornamental and used for climbers,) situated as near the centre of the house as possible, and about mid-way of which, on either of the four sides, as circumstances may require, the glass may be hung.

The above remarks are equally applicable to the temperature of vineries, etc.

And now, let me forestall an objection which may be raised to the article on the succeeding page of the same number. It will doubtless be urged that the vines will start before room can be made in the greenhouse for them. To this I answer, that no gentleman owning a vinery can do without a hotbed; and in this latter the grape-vines may be started, the steam of which will give them a capital start, swelling the buds and wood, so that when the greenhouse is ready for them, they will be found to be quite advanced.

Before closing, allow me to make a suggestion about the application of manures to root crops. The prevalent custom is to mix with the soil, spading in; but I prefer putting it in the bottom of the trench. The philosophy of this is, that the roots seeking sustenance will grow straight towards the manure, and the result will be large, straight roots; while the reverse is the case when the manure is mixed with the top-spading. In some instances the roots will be large but more often forked.

Yours respectfully,

JOHN C. URE.

Chicago, April 5, 1859.

HARTFORD CO. (CONN.) HORTICULTURAL SOCIETY.

At the annual meeting held April 2, 1859, the following officers were elected for the ensuing year:

President—Gurdon W. Russell, M.D. *Vice-Presidents*—J. S. Butler, M.D., Hartford; Edward Bolles, Hartford; H. Mygatt, Farmington; N. W. Stanley, New Britain; Norman Porter, Berlin; S. Lyman, Manchester; E. A. Holcomb, Granby; H. A. Grant, M.D., Enfield; S. D. Case, Canton Centre; S. Moore, Kensington; T. C. Austin, Suffield; H. S. Collins, Collinsville; B. F. Seward, Southington; R. H. Phelps, Windsor; S. M. Chester, Wethersfield; Sherman Steele, West Hartford; Wm. G. Comstock, East Hartford; James T. Pratt, Rocky Hill. *Corresponding Secretary*—D. S. Dewey. *Recording Secretary*—M. C. Weld. *Treasurer*—P. D. Stillman. *Auditor*—S. H. Clark.

GARDENERS' SOCIETY OF CHICAGO.—At an adjourned meeting of this Society it was determined to hold a Floral Fair at the Mechanics' Institute Hall, on Wednesday, the 18th of May; and if practicable, every month. The Committee of Arrangements consists of A. T. Williams, Dr. Bonard, J. C. Ure, Layton, and Bridges.



MORGAN PEAR.
for
THE HORTICULTURIST
Published by C. M. SAXTON, New York

Shall We, or Shall We Not, Enjoy?



B ECKFORD'S celebrated house and park, Fonthill, England, is now in complete ruins. The publication of his life has just brought out some recollections of the man and the place, which are interesting. The grounds of that once celebrated spot are now a tangled mass of overgrown woods, bound and clamped with brambles. The nine miles of drive, along which his four gray ponies used to pad and trot, are now chopped up into three estates. The great abbey, the country neighbors think, cost a million of pounds; it rose like an exhalation, and passed away like a summer cloud. One turret gallery alone stands as a place for picnics, and the roads are rutted deep with wagons carrying stones. The agate cups, gold lamps, proof engravings and fine pictures, and all such rarities, are scattered to the four winds, just like his old rival Horace Walpole's; and now the bleak wind, whistling from the broad, crop-eared Wiltshire downs, keeps rumbling and muttering in every blast, "vanity of vanities: all is vanity and vexation of spirit."

Contrast this idiot's vain expense with the following pretty little cabinet picture from the autobiography of Mary Anne Schimmelpenninck, lately republished in America:

"In this happy valley, Richard Reynolds occupied the principal mansion. My cousin Priscilla was on terms of intimate friendship with him and his wife, and they gladly made an arrangement to receive her at their house as her future home, (for a lifetime). She had her sitting-room and bedroom, and one adjoining for her little maid Joan,—a stable for her horse 'Serena,' and her open carriage, in which she so often used to drive about to visit the poor and enjoy the country. Besides this, Richard Reynolds and his wife formed for her what catholics would call a *solitude*, a walk through a thick grove which terminated in a verdant, open space, where was a rill and cascade falling through the rocks into the river below; here was a sort of open summer-house, and behind it were two more substantial rooms, one of which was furnished with books, writing materials, and everything suitable for contemplation and solitary employment. The other was a little apartment in which Joan was ensconced with her book and her needle, when her presence was not needed by her mistress. Such was the principal home of my cousin, Priscilla Gurney."

The same author, on her first visit to Liverpool, remarks: "I was amazed to see the sumptuous drawing-rooms, rich with satin and silk, in houses where there was no library, and at the large assembly of gaily-dressed and jewelled visitors, many of whom seemed to think that books were as much a superfluity as the great Pascal esteemed brooms and towels."

We do not ask our readers which is preferable,—the gorgeous hangings and mirrors, or a library reflecting like mirrors the greatest minds.

The mistake which many Americans commit in thinking that money with-

out mental cultivation confers happiness, is a fatal one. "Enough is plenty," and with this fully believed in, how many that desire "more" might have been saved from want. The prizes of life are in general not worth the sacrifices paid for them. A man spends all his best days in the uncertain pursuit of riches, or mayhap in the bustle of politics; he wriggles his way to the best places in the State, it may be to the Senate, or a Governor's seat; or he becomes a commercial millionaire: well, he goes into retirement at sixty, but it is a fact that the cultivated resident of the country understands better the meanings of spring, summer, autumn, and winter, than such a man; and nothing that wealth can bring can counterpoise such a source of enjoyment. "Thus you can understand," says a favorite writer, "how I can afford to pity the man on the woosack, while the May-fly is on the waters." Were the sacrifice of nature made for some everlasting good, there would be some sense in it; for temporal and temporary advantages to make it, is consummate folly. Those who do not live with nature through this present June, will never see another like it; for they will be older next year, and the sight and smell of the lilac and rose, and the song of the wren and blue bird, will have lost some bloom and freshness, and suffered for them a little, however inappreciable, diminution in richness and melody.

THE MORGAN PEAR.*

THE Morgan Pear originated in New Hanover County, N. C., on the farm of a Mr. Morgan, since dead, and was introduced into notice by the Hon. W. B. Mears, a lawyer of distinction in that State. The specimens from which the drawing is made, were received from Dr. H. A. Bizzell, an enthusiastic amateur pomologist of Sampson Co., and to whom we are indebted for its history as well as for other like favors.

The specimens vary in size from eight inches to twelve and three-quarters in circumference; we had two of the latter size. In form it is oblate, varying to obtuse pyriform; stem slender, and about one inch in length; basin abrupt and deep; calyx small, and destitute of segments; color greenish yellow, specked with grey russet specks, intermingled with a little tracery of the same; size large, to very large; flavor sweet, juicy, slightly vinous; flesh white, and a little gritty. Ripens during the month of October. Quality *very good*, nearly *best*; better than either Louise Bonne de Jersey or Duchess D'Angoulême. Will not grow on the quince.

The tree is a fine grower; young wood olive green, with white specks; leaves lanceolate and slightly serrated.

J. VAN BUREN.

Clarkesville, Ga.

[We are much indebted to Mr. Van Buren for this and other drawings, &c., and trust that he will continue his favors.]

* See Frontispiece.

THE ORCHARD HOUSE, OR THE CULTIVATION OF FRUIT TREES IN POTS UNDER GLASS.

BY THOMAS RIVERS, OF THE NURSERIES, SAWBRIDGEWORTH, HERTS.

From the Fifth London Edition, 1858.

A few words of preface and apology to the first edition.—It has been, and is, too often the custom of writers on horticulture and agriculture, to write first and practice afterwards,—in other words, to promulgate a pretty theory, and then reduce it to practice: I have not been “to this manner given,” for in this, as well as in other instances, I have reduced my practice to writing. The method of culture given in the following pages, has been to me a pleasant relaxation from the cares of an extensive business; and I feel convinced that it may be made equally agreeable to a numerous class of busy men, who make their gardens a source of untiring, quiet enjoyment.

It is very probable that some who may be tempted to read the following pages will feel surprised that I have made a separate publication on so trifling a subject, when so many horticultural periodicals are open to those who cannot write a large book. They may say, “Why not occupy a few columns in the ‘Gardeners’ Chronicle,’ or a few pages in the ‘Cottage Gardener?’” My motive must be my apology.

For many years our parish church, from causes not proper to be mentioned here, was in a fearfully dilapidated state: a partial repair has rescued it from serious consequences; still, much more is required. A hint from one warmly and actively interested in its restoration has induced me to dedicate the profits resulting from this little publication towards such a sacred and, I trust, praiseworthy object. I hope not to be misunderstood. It is not ostentation that has tempted me to this; no love of fame, but purely the wish to disseminate a taste for refined horticultural pursuits, and a hope that I, a humble agent, may be, through this, enabled to contribute a trifle towards the restoration of the church of my forefathers, and, I trust, of my children’s children.

The same to the fifth edition.—When I ventured to publish the first edition of this little work, I scarcely dared to hope that it would meet with a reception so favorable, and fulfil so quickly the purpose to which it was dedicated. Orchard houses are now familiar things: hundreds are rising up all over the face of the country: no garden structures have ever so rapidly advanced in popularity. That they deserve to be popular, I am more than ever convinced; and I cannot help feeling grateful that, through the exercise of my humble literary ability, so much good, because so much intellectual pleasure, has been derived from this new mode of cultivating fruit trees. In the following pages it will be seen that the idea has not “grown with my growth,”—for I am old and grey-headed,—but rather with my age.

We are, however, as yet only children in orchard-house culture. Every moderate sized garden in England—more particularly in the North—and in Scotland, will, in the course of a few years, have its orchard house. They will glisten on highland and lowland, and gladden many a garden-lover with their genial climate and varied produce.

In the present edition it will be seen that I recommend top-dressing to be done in the autumn, instead of in spring, as heretofore. I have found this to be by far the most eligible season; for, if done too late in spring, it is liable to make the trees shed their blossoms without setting fruit. With apricots, this is more particularly likely to occur. Potted trees, when top-dressed in autumn, commence at once to form fresh roots, which in spring are ready to fulfil their office in supporting the young fruit. Very recently, some cultivators have recommended trees to be shifted and re-potted annually: when they become large, this is a work of much trouble. I can say with confidence, there is no occasion to do this. My finest trees have now been seven years in the same pots; they bore last season large crops of very fine fruit, and are now full of promise, being covered with blossom-buds on short, well-ripened, healthy shoots.

THE ORCHARD HOUSE.

It was, I think, in the year 1849, that, being very fond of figs, I attempted to grow them in pots in one of my vineries; but finding they required more room than I could spare, I sought for some method by which I could overcome the difficulty. The pots I used, I ought to state, were not placed on benches, but on raised borders, for I had adopted the sunken paths and raised borders for many years, to avoid the expense of the usual benches of wood. The roots made their way through the aperture at the bottom of the pots, and the plants thus, even in comparatively small pots, obtained enough of vigor to support a crop of fruit. After the crop was gathered, the pots were gently turned up on one side, and the roots cut off with a knife, water was withheld, and the plants were soon at rest with well-ripened shoots. The following spring they were top-dressed with manure, and again placed on the border; but an idea occurred to me to give more room for the emission of roots by enlarging the aperture at the bottom of the pots: this I at once put in practice, with the most favorable results. I then reasoned, if figs in pots can be made to bear a crop of fruit by thus giving them extra nourishment during the summer, why should not peaches, nectarines, apricots, vines, plums, cherries, and pears, be managed in the same way? They can be; and I have now much pleasure in giving the simple method by which all these choice fruits can be grown on dwarf bushes in pots, with a certainty of a crop every season. I hope to see the day when hundreds and thousands of our small gardens will be furnished with cheap fruit-tree houses.

Glass, timber, and bricks, are now comparatively cheap; for sheet-glass that, when first brought into notice cost 2s. per foot, can now be bought at 2d. per foot; so we can build cheap houses, which, without the assistance of artificial heat, will give us, in average seasons, the climate of the southwest of France,—without the liability to injury from spring frosts, from which all temperate climates, both in Europe and America, at times suffer so severely. Let us now see how nearly glass structures without fire-heat will approximate to the climate of France in one of its most temperate districts,—viz., Angers.

The Chasselas de Fontainebleau grape, our Royal Muscadine, ripens there in the open air, in average seasons, on the 25th of August: this is as nearly as possible the time when it ripens here under glass without artificial heat. The black Hamburg grape ripens at Angers on the 25th of

September : in one of my vineries in a warm situation, I have had them fully ripe on the 15th without fire-heat. We can thus, at a little expense, in our own dear native land, reap the benefits of a warm climate, and enjoy its choice fruits, without suffering by a residence in its oppressive heat.

I may here mention that my idea of the approximation of the climate of the orchard house to that of the south-west of France is not imaginary, for some of my gardening friends from thence have said, on entering it, "Ah ! Monsieur Rivers, voila notre climat !"

I believe that I have more than once described my "glass-roofed shed," for I have not ventured to give it too high-sounding a name ; still, as it must come into extensive use, a better name may be found expressive of this peculiar structure, which is not a vinery, or pinery, or peach-house,—these all belong to great and grand gardens,—but a place for many fruits ; it may, therefore, I think, without affectation, be called an Orchard House, a place requiring but little expense to erect, but little experience and attention to manage, and yet giving most agreeable results. To the suburban gardener, who has but a small garden, which must be a *multum in parvo*,—to the amateur with plenty of gardening taste and but a limited income,—in short, to a numerous class fully capable of enjoying horticultural pleasures, but with purses not bountifully supplied, the orchard house will, I feel assured, be a most agreeable boon. I will, therefore, proceed to give such directions as will, I trust, enable any carpenter to build one. There are two descriptions of houses calculated for this mode of fruit culture—the lean-to and the span-roofed. I shall commence with the former, which is perhaps the most simple and most common form of garden structures.

THE LEAN-TO ORCHARD HOUSE.

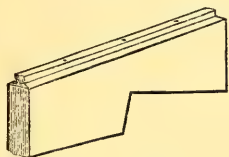
Its length may be from ten feet to one hundred or more, according to means and space ; but its breadth and height should be according to the following dimensions, unless any improved plan may be suggested which will ensure greater advantages at the same cost.

I will suppose that an orchard house thirty feet long is required. A ground plan, thirty feet long and twelve feet six inches wide, should be marked out : then six posts of oak or good yellow deal, five inches by three, and nine feet six inches in length, or of larch poles sixteen inches in girth, cut in two and the flat sides placed outwards, must be firmly fixed two feet in the ground : the ground ends before fixing should be charred two feet six inches from the bottom, and then have a coat of boiling coal tar, which adds much to their durability. They will form the back line of posts, standing seven feet six inches in height from the surface of the ground. For the front wall six posts of the same thickness, four feet six inches long, must be firmly fixed eighteen inches in the ground, so that they stand three feet out.* Two posts will be required at each end ; at one end (if only one door is wanted) these will form the door-posts. On these posts, both at front and back, must be nailed a plate four inches by three, on which the rafters are to rest ; the posts are thus arranged in two lines. Now, then, for the rafters : these must be fourteen feet long. A nine-inch deal, *i. e.*, a deal nine inches wide and three inches thick, will make four, each four and a half inches by one and a half, or nearly so. These are light, strong, and

* These respective heights of front and back are a matter of choice : they may be exceeded ; for I find that trees in pots make most vigorous growth.

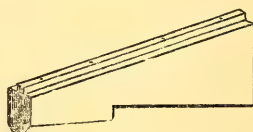
the most economical of all. Instead of "ploughing" the rebate for the glass, which is great labor and waste of material, on the upper side of each rafter, exactly in the centre, must be nailed a slip of half-inch board, half an inch wide; this will leave half an inch of the rafter on each side for the glass to rest on—not too much for glass twenty inches in width. The rafters are so far prepared for glazing, but not yet fitted on the plates at top and bottom of the projected house: no mortices must be made, but the rafter fitted to the back plate by cutting out a piece as in fig. 1, and to the front plate as in fig. 2. They must then be strongly nailed to the front

FIG. 1.



Top end of Rafter.

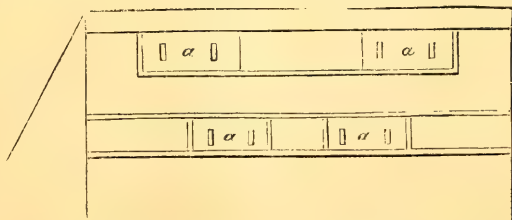
FIG. 2.



Bottom end of Rafter.

and back plates, leaving a space between each rebate of twenty inches. A piece of three-quarter-inch deal board, six inches wide, should be nailed along the top to the end of each rafter, so as to be even with their upper edges, and in this should be a groove to receive the upper ends of the pieces of glass. At the bottom a piece of board, one inch thick and six inches wide, must be let in, by sawing a piece out of each rafter for the glass to rest on and to carry off the water. We have thus formed a sloping roof seven feet nine inches (with the plate) high at back, and three feet three inches high in front. The glazing is now to be thought of. The most economical glass is sixteen-ounce British sheet glass, which can be bought at $2\frac{1}{2}d.$ and $3d.$ per foot, and the size to be preferred, twenty inches by twelve, placing it crosswise, as the rafters are twenty inches asunder. The laps should not exceed a quarter of an inch, and they need not be puttied, as the ventilation is more free when they are not. I find that scarcely any breakage takes place from frost, owing to the large pieces being elastic. On and outside the back posts, three-quarter-inch well-seasoned deal boards should be nailed. In the back wall thus formed, sliding shutters in grooves, three feet by one foot, must be fixed, to act as ventilators—two close to the roof and two about three feet from the surface of the ground, as in the annexed sketch; if two more be added to the right and left of the lower shutters, all the better: *in summer it is impossible to give too much air.*

FIG. 3.



Back of Orchard House. a, a, a, a, Sliding Shutters in Grooves.

The front and ends (except the doorway) must have also three-quarter-inch boards, nailed on outside the posts; one of them, the upper one in the front, to be on hinges, so as to let down the whole length of the

house: these, with the back shutters, when all open in hot weather, will ventilate thoroughly. To add to this, and it is all required in summer,

the boards will shrink and let in air : a fierce sunlight is thus admitted by the large glass, and abundance of air, in which all fruit trees thrive to admiration. The boards and rafters should be painted with stone-colored paint, which will give the house a very neat appearance. So much for the timber and glass ; but when one sees that to walk along the centre of the building, which is about four feet nine inches in height, a person must be of very diminutive stature, the inquiry arises, how is head-room to be made ? Simply by making a trench two feet six inches wide, and fifteen or eighteen inches deep in the centre of the ground plan : this will leave a border on each side four feet nine inches wide, and form a path at the same time. The front border need not be raised, as the trees in two or three years will require all the head-room they can have, but the back border should be raised about eighteen inches above the surface, supported by the brick or boarded edge to the path,—for the sides of the path must be supported with boards or four-inch brickwork. It will be found a great improvement (for which I am indebted to a friend) to divide the back border into two terraces, by raising the back half twelve or fourteen inches, building a four-inch brick wall, and filling in with earth, so that the back row of trees is elevated, and thus escapes any shade given by the front row ; the effect also is very good. Now, as every thing depends on these borders—for there must be no benches and no shelves—care must be taken to make their surface loose and open : loose materials, such as lime rubbish from old walls, and road sand, mixed with manure, may be laid on them, about four inches deep ; they may then be forked over to about nine inches in depth, well mixing the above materials with the soil : you thus have two borders not too far from the glass, and *on* which your orchard will thrive admirably. It will appear odd to read about trees thriving *on* instead of *in* a border ; but when I explain that this is to be an orchard in pots, it will not seem so contrary to our usual garden culture.

It will be seen, I think, by the description I have given, that the lean-to orchard house is merely a low greenhouse, with its roof sloping to the south or south-west, such as may be seen in many of our small villa gardens ;

FIG. 4.



Section of a Lean-to Orchard House.

only, instead of having a path in the centre and a bench on each side for the flower-pots to stand on, it has a sunken path and a border of earth on each side, on which fruit trees in pots are to be placed. The foregoing rough section will perhaps convey an idea of this structure and its use.

By MR. BURTON, Builder, Sawbridgeworth, given in 1857.

3 feet oak door sill, 4 by 3.

84 feet ditto for end rafters and door posts, &c., $3\frac{1}{2}$ by $2\frac{1}{2}$.

110 feet ditto for posts, 5 by 3.

30 feet deal for top and bottom rails, 9 by $1\frac{1}{4}$.

560 feet (super.) ditto for boarding fillets, &c.

90 feet (super.) fir for sides of path, piles, latch, joints,
and buttons.

Painting with anti-corrosion paint, 2 coats.

187 squares, 16 ounce sheet-glass, putty, and labor.

£28 5 0*

By using larch poles instead of squared timber for the posts, a saving may be effected ; by being one's own carpenter, a larger saving. By using oak for posts, unless small oak trees can be bought cheaply, £1 15s. must be added to the above estimate.

The foregoing estimate and sketch are for a Lean-to Orchard House standing by itself: where there is a brick or other wall to serve as a back wall, it may be built against it, with a great saving in expense; but as sliding shutters cannot conveniently be let into such walls, ventilators may

* The following estimates of the cost of similar houses in America have been kindly furnished us by Richard Morris Smith, architect, of Philadelphia.—ED.

FIG. 4. Lean-to, or single-pitch Orchard House :

570 feet of hemlock scantling at 1½c.	-	-	-	-	-	\$7 12
680 " poplar for boarding, &c., at 2c.	-	-	-	-	-	13 60
450 feet, 15 by 20 glass, (per 50 feet), \$1 95	-	-	-	-	-	17 55
Labor, putty, &c., &c.	-	-	-	-	-	32 00

Complete, without wash or paint, \$70 27

Boards to be milled but not hand-planed, and finished in two coats stone-wash if desired,—but the cost of stone-washing not included in the estimate. From \$27 to \$33 should be added, if the work is hand-finished for paint. About \$15 should be deducted if it is built against a stable or other wall.

FIG. 5. Small span, or double-pitch Orchard House:

456 feet of scantling, (hemlock), at 14c.	-	-	-	-	-	\$5 70
544 " poplar, at 2c.	-	-	-	-	-	10 88
550 " glass, (per 50 feet), \$1 95	-	-	-	-	-	21 45
Labor, &c., &c.	-	-	-	-	-	31 00

\$69 03

\$25 to \$32 should be added, for hand-finish and painting.

FIGS. 6, 7. Large span, or double-pitch Orchard House:

Finished in the first manner as above described, about	-	-	-	-	\$120	00
Paint-finished	-	-	-	-	160	00

be made at the top of the slope of the roof, by having every alternate square fixed in a wooden frame, with a hinge at top and a flat piece of iron with holes in it suspended to the bottom corner : an iron peg should be placed in the rafter to fit into the holes ; with this, the ventilators can be raised or sunk at pleasuré.

The most complete house of this kind, built against an old garden wall, with a S. W. aspect, is in this neighborhood. The wall is 12 feet high, and covered with full grown peach and nectarine trees ; the house is 200 feet long and 15 feet wide, 4 feet 6 inches high in front, with front sashes 5 feet by 3, on pivots, so as to ventilate thoroughly ; the rafters are $4\frac{1}{2}$ by $1\frac{1}{2}$ inches, and fixed 20 inches apart ; glass, 20 inches by 15, and every alternate square at the top next the wall is framed, and on hinges opening upwards (these should be arranged so as to open all at once with a line and pulley) ; the path in the centre is 3 feet wide, and on each side, 3 feet from the path, is a row of espalier peaches and nectarines ; between the front row and the glass are bushes in pots, so that in one house are three modes of culture. It is also divided into three seasons by partitions of glass, forming three compartments ; two of these are fitted with hot water pipes, and one left without, as in a common orchard house. In one house forcing is commenced early, so as to have ripe peaches or other fruit in May ; the second succeeds it with peaches in June and July ; and the third, without heat, gives its crop in August, September, and October : peaches and nectarines are thus in perfection from the middle or end of May till the end of October. The fruit on the wall is the first to ripen, and is very early, owing to the warm aspect. This is the most complete lean-to orchard house I have ever seen ; and although 15 feet wide, it can be built at a less cost than the narrow upright houses in front of the walls at Trent-ham, which are only 5 feet in width.

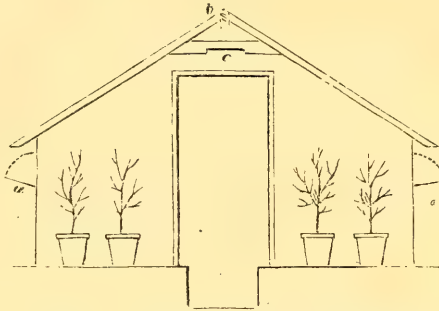
The lean-to house, whether against a wall or standing alone with its boards for walls, forms a most excellent vinery for grapes not requiring fire-heat, such as the Black Hamburg, and the Sweetwater, and Muscadine grapes. The vines should be planted inside the front wall, and 2 feet apart, trained under the rafters, 14 inches from the glass, and managed on the spur system, which is the same as that given for the training of grapes in pots. In the south of England, the sorts above named will never fail to ripen in this kind of vinery. So much do they love free air, that I have for some years opened my ventilators in the middle of July, and have never closed them till the end of September. My grapes have invariably been of the finest quality.

I now propose to give a sketch and description of a Span-roofed House, a little wider and cheaper. A house of this form is more agreeable as a promenade, and I think the trees are attended to with more facility. But unless placed in a warm sheltered garden, peaches and nectarines do not ripen quite so early in it as in a lean-to house. I think, however, it has a more agreeable look, and I must confess a preference to it. The following is a section of what I shall call the Small Span-roofed Orchard House. Height at sides, 4 feet ; at centre to ridge, 8 feet ; width, 14 feet ; rafters, 8 feet in length, 3 inches by $1\frac{1}{2}$, placed 20 inches apart ; posts of oak, 5 inches by 3*, 5 feet apart ; plates, 3 inches by 2 ; central path, 2 feet 6

* Oak posts of this size, I find on referring to the wooden tombs in the churchyard, last from 50 to 60 years.

SMALL SPAN-ROOFED ORCHARD HOUSE.

Fig. 5.



Section of the Small Span-roofed Orchard House.

a, a. Shutters on hinges, 12 inches wide, one on each side. The upper edges should be 1 foot from the eaves.
b. Ridge board.
c. Shutter over the door.

inches wide. The borders in this description of house need not be raised, but the path may be sunk 2 or 3 inches, and each side sloped so as not to crumble into it; the expense of a brick edging is thus saved. The borders should have a dressing of manure and sand, or manure and burnt earth,—in short, of any loose materials,—and be well forked over and mixed to 6 or 9 inches in depth.

Two rows of trees may be placed on each border, thus—



3 feet from stem to stem, so that the sun may shine on every leaf. This is most essential; for I have occasionally had some of my peaches deficient in flavor, and on examination have always found the trees too much crowded, so as to shade each other. In these small span-roofed houses, the trees placed as above form a charming avenue, and are looked down upon by the cultivator, so that every leaf and fruit is seen. It will add some trifle to the expense of building, if the sides, 1 foot or 18 inches from the eaves, are of glass, the wooden ventilating shutter being beneath the glazed part. The doors and ends may be partially glazed: the extra expense is fully repaid by the light and agreeable appearance given by this mode of building.

The cost of a plain-boarded house, as given me recently by Mr. Rivett, Builder, Stratford, Essex, is as follows:—

A span-roofed orchard house, 30 feet long, 14 feet wide; sides, 4 feet, middle to ridge, 8 feet high; oak posts, 5 inches by 3; close boarded, glazed with 16-ounce glass, painted twice with anti-corrosion paint; complete, £27 10s.

The small span-roofed house will be found an agreeable and economic structure; but, as large gardens require large houses, I am induced to recommend for them the following, which I shall term the

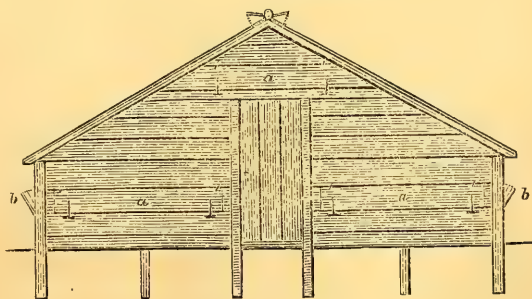
LARGE SPAN-ROOFED ORCHARD HOUSE.

My large houses are twenty feet wide, the sides four and a half feet high, and nine and a half feet in height to the ridge; the paths are two and a half feet wide; the brick beds at the sides are four feet wide and fifteen inches high, the central bed seven feet wide and eighteen inches high. These dimensions may of course be varied at the pleasure of the builder; I give mine exactly as they are. The posts to support the side plates are of oak, six inches by four; they are two and a half feet in the ground, and placed four feet apart; on these are nailed deal boards three-quarters of an inch thick, the upper one of which, on each side, one foot in width, is on hinges to form the shutters for ventilation; the rafters are four and a half inches by one and a half, and placed twenty inches asunder. (In large span-roofed orchard houses used for forcing fruit, and in which artificial heat is employed, one or two shutters on hinges at the apex of the roof are necessary to let off the heated air in sunny weather; but I find them quite unnecessary in houses without fire-heat). This is the most economical method of building large span-roofed orchard houses; but they may be varied, and iron, and brick, and glass, employed at pleasure. One recently built at Andley End is, I think, worthy of a short description: its sides are brick walls, two feet six inches high; on these, sashes two feet six inches by three feet, are fixed with pivots, so as to admit a large quantity of air; width twenty feet, length ninety feet, height ten feet; the roof is supported by a row of two-inch iron pillars along the centre, about seven feet apart; the central and side beds are twenty inches high, the paths three feet wide. This is really a noble as well as a nobleman's orchard house, and forms a healthy and most agreeable promenade. In all orchard houses where expense is not heeded, the water should be conducted from the roof into a tank or tanks underground, either outside or inside. Rain water is the best of all to syringe or to water the trees with.

The following is the estimate recently given me by Mr. Rivett for a large span-roofed orchard house, built in the plain manner, as given in figs. 6 and 7:—

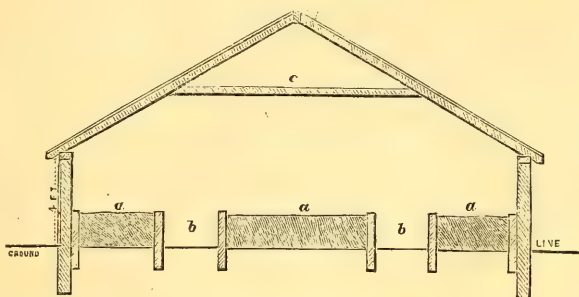
FIG. 6 (*End Elevation.*)

“An orchard house thirty feet long, twenty feet wide; sides, five feet high; middle, ten feet to ridge; with iron pillars to support roof; oak posts, close boarded, glazed with sixteen-ounce glass, painted twice with anti-corrosion paint, £45. The raised brick borders generally built in houses of this size, are



a. Shutters, 1 foot wide, on hinges at ends.
b. Do. do. on each side.

FIG. 7 (20-feet Section).



- a. Beds (supported by 4-inch brick walls, built with cement) filled up with compost.
 b. Paths, $2\frac{1}{2}$ feet wide.
 c. Collar beam. These collar beams should be 6 feet apart; iron pillars, like sun-dials, which may be formed with 2-inch gas pipes, in a row along the centre, support the roof equally well, and have a lighter and better effect: they should also be 6 feet apart.*

not included in the estimate." I may add that raised borders may be dispensed with if half-standard trees are cultivated, with stems from $2\frac{1}{2}$ to $3\frac{1}{2}$ feet high. The tallest trees should occupy the centre of the house: this kind of house, furnished with nicely-pruned round-headed trees, with straight stems, would have a very orchard-like look, and they would be very productive.

It is essential that these large houses should stand endwise N. E. and S. W., or nearly so; for if placed N. W. and S. E., as mine are, owing to the peculiarity of the site, the trees in the north-east border are too much shaded, and do not ripen their fruit well. I also prefer the same position for small span-roofed houses. The height of the above exceeds that which I have described in p. 16, but I am inclined to think it more eligible, for it is surprising to see what fine and even large trees can be grown in pots.

A very good gardener has asserted that peaches and nectarines from bushes are inferior in flavor to those grown on trellises in peach houses; and that he could produce more fruit in the same space by the latter mode. I can easily imagine a partial failure in flavor; not owing, however, to the system, but to the management. The trees alluded to have not had room or air enough; and, consequently, the fruit has not been high flavored. I have had Noblesse and other peaches from bushes in a pot standing in the full sunshine in one of my houses of the most delicious flavor, while those from trees partially shaded were not good. The peach-house trellis system is not adapted for small gardens; one, or at most two trees, will cover the roof of a house 20 feet by 12; and nothing can be grown under them. Besides this, three or four years must elapse before they commence to bear to any extent; and, above all, it will require a good gardener to train and prune them, for no amateur could bear the fatigue of constantly keeping his eyes to the sun.

Since the foregoing pages were written, "crystal palaces" have been built. I have written for more humble gardens; but large orchard houses may be built on the ridge and furrow system: still it will require caution, for I am inclined to think that a ridge and furrow house of great width can never be ventilated sufficiently to give flavor to fruit. One of these "palaces" with raised borders, well furnished with peaches, nectarines, apricots, figs, and even pomegranates, in 20-inch pots, and treated as recommended for all other orchard-house trees, would realize an Eastern garden, and bring

* A lighter and equally eligible mode of supporting the roof is by iron rods (2 inches in circumference) in lieu of collar beams; these must be supported by perpendicular rods, hooked on to the centre and fastened to the ridge board by screws.

to mind one of the fruit gardens of Damascus, so vividly described by travellers. In short, I know of nothing in gardening more capable of fully gratifying the two senses—sight and taste. Thus in great and grand places, in lieu of a cheap and simple orchard house, a fruit conservatory, heated by hot-water pipes, may be built, and the trees grown in ornamental vases placed on elevated beds. A few tea-scented and other delicate roses, and spring-flowering bulbs, planted in the borders, would make them gay, and have a pretty effect. It must, however, be recollected, that but very few of what are called conservatory plants can be planted in a common orchard house; for it is necessary that it should be cold and dry in winter to give the fruit trees their rest. If fire-heat is used, it must only be applied early in spring—towards the end of February—to force the fruit, if early fruit be required, and not in winter, as in greenhouses, to keep out the frost. I have, however, reason to believe that orange trees and camellias may be planted in the borders with a good chance of success: they should have no water after the middle of October, and about the middle of December some sticks should be stuck in the ground round each tree, and the space between the sticks and the tree filled up with dry hay, and a mat or light woollen cloth (*Frigi Domo* would answer well) wrapped round the sticks. The mat or outer cover should be taken off by the end of January, leaving the hay, and replaced if severe frost comes on. It would insure success with oranges and camellias planted in the borders, if the house could be gently heated in severe weather, so as to prevent the temperature falling below 26° ; this would not stimulate the fruit trees to any extent, and yet would, to a certainty, preserve camellia and orange trees. The most severe frost will not injure tea-scented roses or bulbs, if the house be kept perfectly dry after October.

It is very possible that some who read this may say, "Why not plant the trees in the raised beds, rather than in pots or vases?" To this I reply, They cannot be kept under control, unless they are annually lifted and replanted early in November. I had some peach trees which were planted in the raised borders of one of my orchard houses: they bore well; but, in spite of root-pruning, they would grow too rapidly. Now, in pots, the size and growth of the tree may be regulated with the greatest nicety; the annual root-pruning can be done with much facility, and there is no occasion to dig and disturb the borders, which must be done to a great extent to thoroughly root-prune trees planted in them. Indeed, as far as my experience has gone, I can honestly recommend pots, vases, or boxes, for fruit trees in orchard houses or fruit conservatories. In the "*Gardeners' Magazine*," vol. ii., page 278, peach trees are mentioned as having been in pots twenty years without being reotted: they had been kept in health and fruitfulness only by top-dressing.

I am, however, inclined to think that peach and nectarine trees, planted as pyramids and bushes in orchard houses, would give great satisfaction to the "poor gentleman" who is his own gardener, for it is only such that can and will fully enter into any new mode of gardening. Peaches, nectarines, and apricots thus cultivated should be lifted and replanted, with a little rich compost, annually, the last week in October: they should each have, when replanted, four or five gallons of water, and the same quantity about a week after; no more should be given during the winter.

Size of Pots.—In potting trees for this description of culture, pots of

different sizes may be used, according to the taste of the cultivator. If large trees for large houses are required, 15-inch pots (15 inches in diameter and 15 inches deep) will be necessary; for moderate-sized trees, 13-inch pots: this on the whole is the most eligible size. For smaller compact bushes, 11-inch pots are convenient, as they are not unwieldy, and the trees may be made ornaments of the side-board in the dining-room; and beautiful objects they are when full of fruit. Miniature, yet fruitful, peach and nectarine trees may be grown in very small pots, for I have some not more than 9 inches high, in 8-inch pots, full of blossom-buds. Trees of this size must not be allowed to bear more than four or five fruit. They are most interesting, and I have no doubt will, ere long, be extensively cultivated by the curious. These very small fruitful trees are grafted, which seems to make them precociously fruitful: peaches and nectarines are generally budded.

In remote places, where large pots are difficult to be procured, tubs like those used for orange trees, or more properly boxes, may be employed with success, and for trees of large size, *i. e.*, when they are from ten to fifteen years old, they will probably be absolutely necessary. They are easily made: boards, one inch thick, either of oak or deal, should be firmly nailed together so as to form a box fifteen inches deep and twenty to twenty-four inches square; the bottom should be formed with bars one inch thick, placed about half an inch asunder, to allow the roots to penetrate into the borders.

Apricots.—Apricots in pots are very rarely seen, even in large establishments; they are difficult to force, as they will not bear the confined air of a forcing house. I remember, some years since, being much struck with some apricots cultivated as dwarf trees in the South of France: the trees, full of their golden fruit, looked so beautiful,—at the time I wished that our climate would allow us to grow them in the same way. I did not then think of cheap glass, root-pruning, and pot culture.

It must always be borne in mind that, without abundance of air and the full light of an unshaded roof,—by this I mean that no vines must be trained under the glass,—fruit of high flavor cannot be grown; the trees will bear well, but their fruit will be vapid and flavorless.

The best trees for pot culture are those that have been in pots one or two years: if these can be purchased, so much the better. The next best are trees that have been removed and cut down one year in the nursery. If neither of the above can be found, “dwarf maiden trees”* will do. Trees taken from the open ground must not be potted till the end of October. Presuming that potted trees have been procured, they may, early in October,—if omitted then, in November or December,—be repotted into pots of the size selected for this system. I have named 11-inch pots, because they are portable, and the trees may then be shifted into large pots as they advance in growth; 11-inch pots will, at any rate, do well to commence with. October, November, and December, are the best months for potting trees; they may indeed be potted till March, but then no fruit must be expected the first season. If fruit-bearing trees that have been grown in pots can be procured, they cannot be potted too early in October.

I know of no compost better for stone-fruits than two-thirds turfy loam and one-third decomposed manure, to which some road or pit sand may be added. The loam should not be sifted; if it contains a large proportion of

* This is a term applied by nurserymen to trees one year old from the bud or graft.

lumps as big as an egg, so much the better. If you examine an 11-inch pot, you will find it eight inches across at the bottom, and the aperture from one inch to one and a half in diameter. Take a light hammer, and enlarge this aperture to five inches in diameter*; then place four or five large pieces of broken pots or tiles across, so that they rest on the inside ledge left by the hammer, leaving interstices for the free emission of roots: on these place some of the most lumpy part of your compost; then your tree, not too deeply, but so that the upper part of its roots is a little below the rim of the pot: if it has a ball of earth, loosen it; fill up with compost; ram the earth down firmly, as you fill, with a stout blunt-pointed stick; place it on the border where it is to grow during the summer; give it two or three gallons of water, and a top-dressing of some manure to lie loosely on the surface, and the operation is finished.

We will suppose that our tree, a nice dwarf bush, with five, six, or seven branches,† is potted. It may rest till February, and then be pruned,—a pleasant, simple operation, more easy to show than to tell how to perform. I may as well now state that the pruning recommended here for apricots will serve for all bush fruit trees under orchard house culture, except peaches, nectarines, and figs. Each branch must be shortened with a sharp knife to ten inches: these shortened branches will form the foundation of a nice regularly-shaped bush. In May each branch will put forth three or four shoots: all of these but the topmost one must be pinched off to within about two inches of their bases: they will form fruit-bearing spurs; these will continue all through the summer to make fresh shoots, which must always be pinched off to a length of two inches. By the end of the first season the leading shoots of the tree will be probably three feet in length, and, as well as the spurs, be furnished with blossom-buds. The summer is past; the month of October is with us. Its shoots are ripe, and the tree has ceased to grow: it must be put to rest for the winter, by lifting up the pot and cutting off closely every root that has made its way into the border: it is then ready for its top-dressing, the method of giving which I have described further on.

The second season:—in February, or early in March, the leading shoot made the preceding year, and which ought to be from two to three feet long, must be shortened to ten inches, and the young shoots as they push forth in summer (all but the leader) be pinched off as in the first season. The third season:—as the tree will have increased in size, its leading shoots may be shortened to six inches, and as it becomes aged and fruitful, annually to four inches, and at last pinched off in summer to two inches, as to make a compact round bush. In the course of time some of the shoots in the centre of the tree will require thinning out with the knife, if at all crowded.

The general management of the trees the second year should be as follows:—

February is with us, and, if the season be mild, buds are beginning to swell, and flowers to bloom: the trees in your orchard house are, however, dry, dusty, and stagnant; place them in their stations, three feet stem from

* I now have my pots made with five holes, each an inch and a half in diameter. In remote places, where these cannot be procured, the enlarged holes may be used.

† If a tree with only three or four branches is potted, they must be cut into four inches; and the tree must have a season's growth to form itself.

stem, give each of them a small quantity, say a pint, of water,—not, however, if the winter is still raging,—let them rest three days, then give them a quart each—in short, gradually saturate the earth in the pots, and afterwards water them regularly according to the state of the weather. The buds, if the weather is mild, will soon begin to swell, and in March, or early in April if the season be late, they will put forth their full bloom; and beautiful things they are, for no frost, no storms, will destroy the blossoms. If the weather be sunny, with sharp frosts at night, as is often the case in early spring, the shutters, both back and front, may be open all day and closed at night; if a wind-frost and cloudy weather, they may be closed day and night; the ventilation through the joints of the boards will then be amply sufficient. With this treatment nearly every blossom will set. As soon as the fruit becomes the size of a horse-bean, commence syringing the trees morning and evening with soft water, and continue to do this all through the summer till the fruit begins to change color before ripening. Weak liquid manure may be given once a week during the summer. This is, however, almost a matter of choice. My trees grow and bear well without it. Guano water, one pound to twenty gallons, is perhaps as good as any; and a good soaking of this once a week is better than using it more frequently. While in their young state, the fruit must be thinned, leaving, at first, upon a bush that has been two years in a pot, about three dozen; which, when they attain the size of a small nutmeg, must be reduced to two dozen: the third year, a tree, if it has prospered, will be able to bring three dozen to maturity; it is, however, better to have a few finely-grown fruit than many that are small. If some of the trees are required to decorate the dessert—and what can be more ornamental than an apricot tree full of fruit?—they must be prepared for removal by lifting the pots a week previously, so as to break off the roots that have struck into the border: no harm will be done,—it only checks their growth a little prematurely; they must, however, in such cases, be brought back to the orchard house after the fruit is gathered, and have water till the end of October.

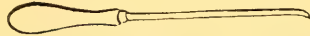
To sustain trees in health in pots something more must be done than allowing their roots to go into the border; annually, in October, every tree should have a top-dressing of rich compost. I have employed, with much success, horse-droppings gathered from the roads, and unctuous loam, equal parts. The former I have had saturated with night-soil or liquid manure, and then exposed to the air for two or three months before mixing it with the loam. Some powdered charcoal strewed over this compost will prevent any disagreeable smell. Any kind of rotten manure, however, and loam, seems to answer well for top-dressing, which is done in the following manner: take out a portion of the soil, five or six inches in depth, and about four inches in width all around the side of the pot, leaving the central mass of roots undisturbed (a portion of the mould may, however, be picked out from among the mass of fibres with advantage, as fresh food can do them no harm); then fill in the compost, and ram it firmly down; keep on filling and ramming till it is on a level with the edge of the pot; place one or two inches of loose compost on the surface, as it will settle much during the winter; give one or two good soakings of water; and then place the trees close together, for you will then have more space for winter parsley, lettuces, young cauliflowers, and other matters requiring shelter. Water

must be withheld, and the trees suffered to remain dry and completely at rest during the winter.

This treatment may be continued every year without variation, except as regards pruning. In removing the trees to their allotted places on the borders in spring, I have lately found it beneficial to take out about two shovelfuls of earth on the place where the pot is to stand, and replace it with the same quantity of the compost used for top-dressing: the tree is thus fed from above and below. It will be necessary in very dry winters to watch the trees to see if their shoots shrivel; if so, they must have a small quantity of water, but not in severe frost; and if the winter be excessively severe, to "make assurance doubly sure," some dry hay or litter may be laid on and around the pots: the dry state of the soil will, however, as far as my experience has gone, perfectly resist the effects of frost.

The best implement for top-dressing is a piece of iron rod an inch and a half in circumference and nine inches long, flattened at the end, with a handle of wood five inches long, like the annexed figure.

FIG. 8.



Now, let us see what we may expect from this treatment. The apricot, the peach, and nectarine, as is well known, all come from the East. We will take Persia or Armenia. The winter there is dry and very severe; the spring dry, with hot sun and piercing wind, just when peaches and apricots are in full bloom, and yet how they succeed! Let any one go into an orchard house when we have our usual March weather: the wind will whistle through it, and the climate will be dry, sunny, and bracing; the blossoms, under these circumstances, will all set. Unfortunately, we cannot command sunshine enough to carry us along, to make our fruit ripen in May and June, as in warmer climates; we must, therefore, wait patiently, for our orchard house climate is slow but sure in its operations. If the above directions are followed, Eastern nature is imitated as closely as our cloudy skies permit. The trees bloom in a dry, airy place; they pass through a comparatively dry, warm summer; they are, like all trees natives of dry climates, early in a state of perfect rest, which is continued all through the winter, and thus they form healthy shoots and well-developed blossom-buds. Nothing in culture can be more perfect, and all is so simple, that, knowing as I do, with what facility it is done, I feel ashamed of the many words I have used in describing it.

It will be seen that I have, to carry out this system, recommended houses of wood and glass; those, however, who prefer brick to wooden walls, may have them, as any greenhouse may be made into an orchard house, by merely lowering the roof to the height given in page 10*, sinking the pathway, and having sliding shutters, back and front. The grand essentials are, low roof, borders instead of benches, and constant ventilation, more or less, according to the state of the weather, through the shutters; but in houses with brick walls there will not be that constant, gentle percolation of air which there is through boarded houses, and which seems so highly favorable to the well-being of stone-fruits.

* It must always be borne in mind, that a low roof, so that the trees are not too far from the glass, is most essential. My trees, seven years old, nearly touch it,—the nearer the glass the finer the fruit.

I have, I find, omitted to state the number of trees that may be grown in a given space. The trees should be placed in the borders, back and front, three feet apart, stem from stem. A house of the dimensions given in p. 15 will thus hold from twenty-five to thirty trees. Thirty trees will give sixty dozen and upwards of fruit, when in full bearing. A small bush of the Pit-maston orange-nectarine, four years old, produced, one season, four dozen of fruit, and brought them all to perfection ; still this is too many, as some of the fruit were small. I mention this merely to show what can and may be done in this very interesting mode of cultivation, which, to sum up, is as follows : annual top-dressing, annual summer pruning by pinching, autumnal or spring pruning, and root-pruning.

There are, I well know, some amateur as well as professional gardeners who object to the pot culture of apricots ; to such I can with confidence recommend planting of apricot trees in the borders, and lifting and replanting them biennially, about the end of October, with a few shovelfuls of the potting compost : they soon form compact and most fruitful bushes : I have some trees under this treatment remarkable for their healthy and sturdy growth.

The season of that very fine sort, the Peach-Apricot, may be prolonged to a great extent ; it generally ripens in the orchard house about the first week in August, but by the following simple method it may be had in perfection till the middle of October. The end of June some trees full of fruit should be selected, and those that are to be very late should be placed under a north wall till the first week in September, and then removed to the orchard house to ripen their fruit. Those that are to ripen in September should be placed in a sunny, exposed place, till the end of August, and then be removed to the orchard house. The fruit from those trees that are much retarded will not always prove good, unless the weather be fine and warm ; but that from trees set out of doors in a sunny place and then ripened in the house will be most excellent.

Half-standard apricots may be made charming ornamental trees for the summer decoration of the flower garden ; for this purpose trees with nice straight stems about three feet in height should be selected, and planted in pots or tubs. They should be grown in the orchard house, and about the middle of July be removed to the lawn or any part of the garden where such trees would be desirable. They can be pruned into round heads and employed for summer ornaments, just as orange trees are in many gardens : they will be found equally ornamental and more useful, because their fruit is valuable.

The most desirable sorts of apricots for pot culture are : the Red Masculine, which ripens in June ; the Large Early in July ; St. Ambroise, which follows very closely ; the Kaisha ; the Blenheim ; the Royal ; and the Peach-Apricot, like the Moor Park, but larger and a better bearer. These are placed as nearly as possible in the order of their ripening, and give a good succession.

They will come in nearly at the same season as those on walls ; for it must be understood that fruits in thoroughly ventilated orchard houses are not much forwarded unless the season happens to be very sunny. It is not an *early* but a *certain* crop that must be expected. I have not named any later kind than the Peach-Apricot because it is so easily retarded, and is always of the highest excellence ; it is also the most abundant bearer of all.

FIG. 9.



An Elrage Nectarine Tree, three years old, from a Daguerreotype.

well, however, state, once for all, and for all descriptions of fruits, that, if fewer and larger trees are required, larger pots may be employed; thus 13, 15, or 18-inch pots may be used with equal success, by having numerous apertures at the bottom, allowing the emission of roots during the summer, root-pruning, and putting the tree to rest during the winter. A peach or nectarine tree may thus, in two or three years, be made capable of bearing many dozens of fruit; but I must confess that my taste inclines to small prolific trees only because one can have greater variety in a small space; and small trees are pretty, are easily looked over, so that each leaf and bud, each blossom and fruit is known.

If peach trees, already in pots, and in a bearing state, can be purchased, so much the better, for then a year is saved; but as such are more expensive than either "maiden" or "cut-down" trees, the cost of which is generally about 1s. 6d. to 2s. 6d. each, these had better be purchased. I may here state that "cut-down" trees are two years old, and if nice healthy trees of this description, with fully ripened shoots, can be found, they are better than "maiden" trees. But as they are not often to be met with,

Peaches and Nectarines.

Few fruit trees give more satisfaction in the orchard house than a choice selection of peaches and nectarines: when in blossom, in early spring, the trees are so fresh and beautiful; they are so exceedingly prolific; and in autumn, what fruit can vie in beauty with a ripe peach or nectarine? and what to the lover of fruit trees can be more gratifying than to see his sideboard or dining-table decorated with peach-bushes in pots, studded with their lovely and perfectly ripened fruit?

If bushes of only a moderate size are required, 11-inch pots, as recommended for apricots, may be used. It is surprising to see what vigorous growth, and what fine fruit, peach trees in 11-inch pots give; for, owing to the compost being rammed down, a large quantity of nutriment is given in a small space.

I may as

I will first give the treatment required by one-year-old, or "maiden" trees.

These have one shoot, more or less vigorous, which should be well furnished with buds towards its base. This shoot must be cut clean off with a sharp knife, at the seventh bud from its base, and the tree then potted in the same compost recommended for apricots, in the same sized pots, and at the same season, being towards the end of October, or early in November.* The following summer every bud will, or ought to, produce a shoot. If there are seven shoots, the tree is formed for the season: they need not have their tops pinched off, but will merely require the laterals (small side shoots) pinched off to within two buds of their bases as soon as they are four inches long. This will induce the ripening of the shoots, so that by the end of the summer they will be full of blossom buds. At the end of August the point of each shoot should be pinched off, and they will then only require the annual pruning, either in autumn or spring, for which directions are given below. If the tree puts forth a fewer number of shoots than seven, the tops of all should be pinched off early in June; each shoot will then put forth three or more young shoots; all that are not required to form the tree must be pinched off in the same way as laterals, leaving seven, or, if the tree be vigorous, nine shoots to each tree. These trifling manipulations are easy to do, but difficult to describe: so to make the matter as clear as possible, let us place a young tree before us early in June, with five branches, each twelve inches in length; then let us, with a sharp penknife, shorten each branch to nine inches; then, at the end of June, let us take the same tree in hand, and we shall find that each shortened branch has put forth two or three young shoots; we must pinch them so as to leave on four branches two, and on one only one, making nine shoots, which as they grow should have their laterals pinched off regularly; they will then make vigorous trees in one summer, and form abundance of blossom-buds: no other pruning is necessary the first season; and if abundant ventilation and syringing daily, as recommended for apricots, have been attended to, the fruit buds will, towards the end of August, begin to be fully developed. The experienced gardener can at once distinguish them: such a person may prune his trees early in October. Let me endeavor to tell how to distinguish a fruit-bud, which, by the way, is the only bud to prune down to.

Well, then, generally, or "general always," as a foreign friend expresses it, when he wishes to say anything that invariably takes place, towards the base of each of your seven or nine shoots, you will find four or five pointed single buds, covered with their brown coat; these are leaf-buds; next to these, and higher up the shoots, are triple buds, a plump silver-coated one on each side, and a thin one in the centre. These plump silvery buds are blossom-buds, and the central one a leaf-bud, which produces a shoot, so necessary to the well-being of the blossom-buds, that without it they would be abortive. Be sure to have on each shoot, if possible, nine to twelve of these triple buds, and cut off the shoot close to one of them; if this cannot be found at the proper place, so as to be able to form the foundation of a nice, regularly-shaped, bush-like tree, cut off the shoot at a leaf-bud. If the trees are pruned in autumn, the buds are difficult to distinguish; it

* This season is recommended, but it may be departed from; for my peaches and nectarines are sometimes not potted till March, yet they make fine growth.

will, therefore, be better for the beginner not to prune his peach and nectarine trees till February or early in March, when every bud will plainly show its character,—the blossom-buds by that time will have opened their silvery coat, and the bright pink will be peeping out. If the shoot be cut off at a single blossom-bud, it will die down to the next leaf-bud ; this must therefore be carefully avoided.

Let us now proceed with the culture of our maiden tree. A season has passed : it is early spring, say the middle of February, and our tree, with its nine branches of the last summer's growth, is before us ; three of these should be cut down to within five buds of their bases, to give a supply of young shoots for the succeeding year, and six should be cut down so as to leave on each branch ten or twelve triple buds. These are the fruit-bearing branches for the present season : and so it must be every year ; a few branches, say one-third, must be cut in closely on opposite sides of the tree to give young shoots, and the remainder left as above to bear fruit. Those shoots that have borne fruit will often require to be cut out, to make the tree dwarf and prevent its becoming naked, as the spurs die after bearing, unlike those of the apricot and plum, which continue to bear fruit for many years. Much will depend upon the sort cultivated, and the vigor of the tree : one thing must be borne in mind,—do not let the tree become bare of young shoots towards its base, and tall and straggling. If pruned in spring, the nature of every bud may be seen, and the tree formed, by the proper use of the knife, into a fruitful, beautiful bush.* From twelve to fifteen leading shoots should be left in summer pruning on each tree when in a full-bearing state.

I have thus endeavored to follow the “maiden” tree to its fruiting state. The “cut-down” tree, which should have four or five branches, should be potted in autumn and pruned in early spring : each branch must be shortened to six inches ; these will put forth numerous young shoots, which in June should be thinned out with a sharp knife, leaving nine or more shoots to be pruned the following spring, as above directed. If trees in pots three or four years old in bearing state can be purchased, it is a saving of time, for if they are potted before Christmas, a crop of fruit may be expected the ensuing summer ; in such trees, the shoots intended to bear fruit, and covered with triple blossom-buds, may be shortened to ten buds, and those which are to make young shoots for the next year's bearing should be shortened to five buds.

I think I may now add with safety, having (this day, February 14, 1856) just pruned my trees for the sixth year, that but little anxiety need be felt by the beginner, for when a peach tree has been in a pot in an orchard house for two years it *will* bear, prune it how you will. All that seems to be required is to make the tree symmetrical and prevent its bearing too bountifully, for it must be borne in mind that fruit from a tree overloaded, whether under glass or in the open air, is never of a fine flavor. Peaches, pears, plums, apples, and indeed all descriptions of fruit, suffer in flavor to an extent scarcely thought of, if the tree be suffered to bear too many. It is better to have one dozen of peaches large and of fine flavor, than two dozen small

* When the trees are in a bearing state, many short, spur-like shoots, from four to six inches long, will be made every season on the stem and towards the base of the principal branches. These will be generally covered with single blossom-buds and a terminal leaf-bud : they may be removed if too much crowded, *but never shortened.*

and inferior; besides this, a tree suffered to bear too large a crop will be sure to fail the following season.

I need not repeat here the directions for the general management I have given for apricots: exactly the same is required for peaches and nectarines, which may be grown with them; the same top dressing, liquid manuring, syringing, root-pruning, and winter management.

Peaches and nectarines, either in the open air or under glass, are inclined to grow too vigorously: pot culture here gives a great advantage; the trees should be lifted, so as to break off all the roots that are entering the border from the apertures at the bottom of the pot; this operation should be performed once a week, commencing the second week in June, and continued till the end of July; they may then be suffered to make roots into the border till the fruit is gathered. By this treatment the trees become sturdy and short-jointed; *i. e.*, very short spaces will be found between the buds. Trees that have been from five to seven years in pots will require abundance of water daily, in summer, as the pots become full of roots, and absorb a large quantity.

There is a matter of importance, in the culture of peaches and nectarines, to which I beg the reader's special attention, although it is a repetition, and that is free ventilation. In the warmer parts of England, and more particularly in Surrey, I have heard of two or three failures in growing peaches and nectarines in orchard houses, owing entirely to the attacks of the red spider, brought on by the unskilful management of servants, calling themselves gardeners, who would persist in shutting up their houses at four o'clock in the afternoon, in hot weather, and not opening them till nine in the morning; the poor trees were thus suffocated, and so enfeebled as not to be able to resist the attacks of this most persevering and insidious enemy. Now let me advise any one who has such a servant, to open all the shutters about the first week in July, and have them nailed so that they cannot be closed; they may remain so till the first of September. If the trees are regularly syringed, no red spider will make its appearance, and the fruit will be of much finer flavor for this constant and free ventilation. The usual and proper mode of ventilation is to have the shutters open by day all through the spring and early summer months, and open night and day as soon as the peaches begin to color, unless the house be in an exposed place, and the weather cold and windy, then they should be only partially open. But few gardeners have the courage to give air enough to orchard houses and vineries: in mine, without fire-heat, abundance of air is given night and day, from the middle of July till the grapes are ripe.

A very simple and agreeable method of retarding such mid-season peaches as the Noblesse, Royal George, and Grosse Mignonne, and all mid-season nectarines, may be practised as follows:—Remove the trees from the orchard house to the open air in the end of July (if the season is early, and the house is in a warm situation, a week earlier); place them in some warm sheltered place, or in front of a south or south-west wall, about two feet from it. In a few days both peaches and nectarines change to a deep crimson, and if the weather is sunny, their flavor will be very vinous and piquant. Under this treatment, such sorts as I have named above will ripen by the end of September, or later, according to the state of the weather. By this method, the season of our fine melting peaches and nectarines may be much prolonged, and, in cases where the absence of a family

may require it, the whole crop of an orchard house can be retarded. Half-standard peaches and nectarines with nice round heads, may be used as ornamental trees in the same way as recommended for apricots.

Within these few years a method of growing peach trees against walls has been brought into notice in France. This is called training "en cordon oblique," and is carried out by planting against walls, maiden trees twenty inches or two feet apart at an "angle of forty-five degrees." The lateral shoots are shortened in closely, and rigid summer pinching is practised, so that a wall is soon completely covered with short fruit-bearing shoots. In warm climates and in dry soils this method has been found to answer very well, but has been objected to in climates and soils of a contrary description, as the vigor of the trees is not restrained enough by the most severe summer pinching. The French gardeners do not know, or will not practise, root-pruning or annual removal, which would doubtless make these very pretty trees abundantly fruitful. The annexed is a figure of one of these oblique trees, from the work on pruning by M. Hardy.

FIG. 10.



A Peach Tree trained "en cordon oblique."

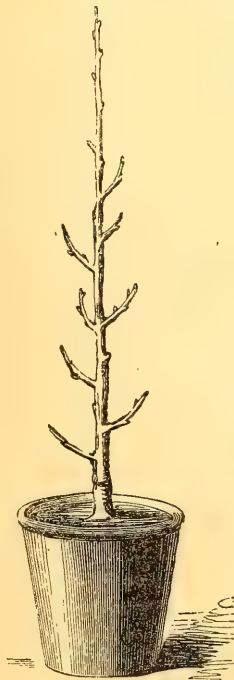
I now propose a modification of this mode of culture for the orchard house, by forming peach and nectarine trees into close compact pyramids like an upright cypress, and annex a figure of a maiden tree potted and pruned. For this purpose maiden trees with straight stems and well furnished with lateral shoots should be selected, and planted in 11-inch pots. They should not be more than from three and a half to four feet high; if more, their tops may be cut off to that height. Each lateral shoot should be cut into two buds; these and the buds in the stem will give numerous shoots: during the whole of the summer every shoot must have its point pinched off as soon as it has made six leaves; those that are weak and form their terminal bud at the fifth leaf need not be shortened. This incessant summer pinching of the shoots of a potted tree, in the climate of the orchard house, will, in one season, form a compact, cypress-like tree, crowded with short fruit-spurs. The second season these should be thinned out in February, so as to leave them as nearly as possible at regular distances, and in summer the fruit should be thinned and the shoots pinched as in the first season.

A close fruitful pyramid will thus be formed, on which the fruit will be fully exposed to the sun and air. A great number of trees may in this way be grown in a small space, and they will form beautiful objects of high culture. I have recently planted some trees of this description in one of the

borders of an orchard house, and intend to manage them after the method I have given as regards summer pinching; and lifting and replanting them every year early in November. A plantation of these pyramids, in a small span-roofed house, will, I am certain, prove most interesting and profitable.

The peach and nectarine season may be much prolonged by a judicious selection of varieties. The earliest peach is the Red Nutmeg, which will ripen in July (it is small, but very nice); next the Early Anne and the Early York, which ripen immediately after it; then the Acton Scot; the Early Grosse Mignonne; the Grosse Mignonne; the Noblesse; the Royal George; the Galande; the Reine des Vergers, a beautiful and hardy new peach; the Barrington; the Chancellor; the Walburton Admirable, a most *admirable* new variety; and the Late Admirable, of which the Teton de Venus and Bourdine are excellent varieties: these ripen nearly in succession, are all melting peaches, and give their fruit from July till the middle of October. I am also inclined to think, that with the large "Pavies" or clingstone peaches of France, such as the Pavie de Pompone, and the Catherine, the peach season may be prolonged till the middle or end of November.

FIG. 11.



A Maiden Peach Tree pruned to form a close Pyramid.

These very late peaches, on walls in moist climates, are quite worthless; but in the dry climate of the orchard house, although not high flavored, they serve to prolong the peach season. They should be cut in slices and served with wine and sugar, as in France.

A selection of nectarines may include the following:—Fairchild's Early, small, but the earliest; Hunt's Tawny; Elruge; Hardwicke Seedling; Pitmaston Orange, very beautiful and very good; Violette Hâtive; New White; Roman; Early Newington; and Late Melting.

There is a race of nectarines from Syria well worthy of especial culture; the best of these is the Stanwick and seedlings raised from it. Many gardeners have failed in its culture, finding it crack, and drop off in stoning. It is easily cultivated in pots, but requires an orchard house gently heated: the best of houses for the culture of this fine fruit is the small span-roofed with boards, and heated by one 4-inch hot-water pipe round the house. As soon as the trees are in blossom in April, the fire may be lighted every morning at six and kept up till five in the afternoon all through May, giving abundance of air in the day, and a portion by night, although the crevices of the boards will admit some. In June and July the fire may be lighted at six in the morning, and suffered to go out at mid-day; the trees must be syringed regularly.

By this treatment the fruit will ripen in the South of England in August, be clear, free from cracks, and the most perfect and delicious of all nectarines; its flavor is most peculiarly gratifying, and I have no hesitation in saying that no fruit can be imagined more exquisite in flavor.

(To be Continued.)

INQUIRY—AGAIN.

BY WM. BACON, RICHMOND, MASS.

WHY is not Horticulture one of the branches taught in our common schools? *Horticulturist* of January, 1859.

This has long been a query in our own and probably in the minds of many others, and we are very glad that some are beginning to speak out on the subject, in the hope that speaking will arouse action, while vigorous action will, we have no doubt, solve the problem and say it is done—very successfully taught.

But why is it not taught now? Certainly not because the individuals in these schools lack in disposition and ability to study those branches. The love of nature and all her works is not one of the lost attributes of man, following his expulsion from Eden. Who ever saw an infant that was not attracted and pleased by the gaudy colors of flowers or the glowing beauties of fruit; or that was not attracted by the hum of animated nature,—by the leaves trembling in the summer breeze, or the swaying of naked branches in the rough blasts of winter? It is an inborn principle of our nature to love and admire these, and when we cease to cultivate these principles and let other objects assume the position they have occupied, we enter upon an artificial state of existence, often full of yearnings for beautiful and quiet days, like those from which we are so estranged.

This love of nature does not leave us with the fleeting days of infancy. In youth we see it develop itself in stronger and more forcible illustrations. Planting, transplanting, sowing, nurturing, and harvesting then come in, and the desire for new creations of natural beauty causes the hands to labor for the gratification of the mind. We see it in little cultivated patches, in secluded nooks around the homesteads; we see it around the district school-house,—and among the recollections of our earliest school-boy days, there are none pleasanter than those when the corners of the old Virginia fence, near the old brown school-house, were farmed out among the juveniles for special cultivation, and brought into culture with such primitive tools as school-boys could manufacture, and such crops were started as school-wisdom dictated. Oh! what sadness has come over us, as some unlucky morning, when our crops had well advanced in growth, to look upon their ruin. But such sorrows were only for a season. The opening of another spring would cause fresh inspirations of hope to spring up in the youthful mind, and the labor was cheerfully gone through with again to end in the same disheartening results. Some vagrant animal would come by night and transform our hopeful fields to barren fallows.

This was nothing peculiar to us, to our school or to our day. We have seen the children of each successive generation, and of localities almost innumerable, acting and reacting in scenes like those we cherished, and at present we see no probability of the course being abandoned.

It may safely be inferred then that there is no lack of material to educate in horticultural knowledge in our common schools, and no obstacle in the way on the part of the material, of moulding it into the noblest forms of science and practice. A little teaching, drawing out of this natural taste, would be a great service in the matter, and probably greatly increase

the numbers as well as the knowledge of cultivators. Why are they not taught in common schools?

In the first place, then, we have no teachers competent to the work; education and habit lead them to look upon this matter as too small a one to come within their notice. Young men who teach are for the most part preparing for other professions, and their school-houses must be devoted to sciences in which they are more familiar, old stereotyped affairs, while the hours out of school must all be devoted to pleasure or the studies prefatory to some other pursuit. Many of our common schools are taught by females, like the daughter of a worthy and successful farmer we once knew, who almost fainted because ploughshare was said in her presence. She would probably have gone quite off, but for the admitted fact that she did not know what it was.

Our young lady teachers, unlike the young ladies of other lands, have more important communings than those with nature, to claim their attention. But the fault does not rest mainly that we have not teachers to instruct in rural arts. Parents and guardians have not yet acknowledged the estimation that should be given to an enlightened system of cultivation. If they would do so, and if the State would make it as imperative that teachers should instruct, or be capable of instructing, in some of the branches of rural arts, as it does that they shall be qualified to teach algebra and physiology, the time would be short before we should have teachers ready to commence; and our normal schools, so dependent on agricultural patronage for existence, and so full of philanthropy towards the rising generation, would have their experimental grounds, and their cabinets of natural history, their text-books and lectures, to prepare these teachers for a new and attractive enterprise.

We have long been of the opinion that the common schools should be made a nursery in which horticulture and its kindred arts should be kindly nourished. Let such an education be encouraged at home and fostered in these institutions, and the young cultivators of American soil would act from an intellectual impulse that would not cease when school-days were ended. The rills of knowledge poured into the mind there, would create a thirst that would be satisfied only by new and oft-repeated draughts of knowledge in all after-time.

Then how soon we should hear a call coming up from all the people in one united voice, too strong to be stifled with apathy, Give us higher and better endowed institutions all over the land, which is ours; wherein we, our sons and our children's children to all time, can learn the arts of nature, and successful cultivation of her healthful, luxurious, and life-sustaining products. Hitherto we have yielded our known rights to the advancement of other objects. From the earliest period of our country's history legislative aid has been granted in munificent sums for the support of institutions to advance men in other professions. To carry out these grants we have been taxed, and without complaint have given of the substance of our toil to favor these objects. In the trying hour that severed our country from foreign power, our fathers in a mass arose, left their rude ploughs in the furrow, and hastened to the fields of blood and carnage to drive the foe from our shores. The blood of our ancestors was spilled to give our country a place among nations. The funds have been liberally bestowed to make this an *enlightened nation*. We have neglected ourselves and our

profession, to establish other institutions upon permanent and successful bases. We feel now, that the time has fully come when educational aid should be given to us as a professional class on whom the prosperity of the country is very intimately connected. We strongly urge our claims, and shall never be satisfied until they are cancelled.

What a beautiful era it will be in the history of our country, when the sciences of earth-culture are introduced and successfully taught in our common schools! Then all the energy of cultivators will be awake in the study of natural causes and effects, as they operate on the art that feeds and beautifies the world.

One preliminary step has been taken to carry out this object. Our school-houses, instead of being located in cramped and useless spots, and set about three feet off the public highway, are being built with spacious grounds, the scholar's farms around them. Let these grounds be beautifully laid out, and planted under the eye of the scholar; and then let their future keeping be entrusted to the scholar, under the watchful care of the teacher. Gardens of beautiful trees, luscious fruits, and blushing flowers would then embellish these humble seminaries of learning, and a taste would be cultivated there to go forth to beautify and enrich the whole earth.

THE HYDRANGEA AND LUCULIA GRATISSIMA.

BY FOX MEADOW.

WHEN Flora has once smitten the heart of man at any period of his life, especially in his youth, and the force of circumstances carries him from those higher orders of her gorgeous attractions—when he has to bid adieu to those splendid temples at whose altar he has oft worshipped and contributed his mite, it is not *time* that can efface from the heart or the memory, the beautiful forms that have been presented at the shrine of the “fair goddess.”

No, not *time*, we say, for years may roll on—the physical system may droop, but the *memory*, ever fresh and green, revels in the reminiscences of the past, and the lovely forms spring into ideal life before him, and his heart gladdens at the appearance of some beauty *long lost to his vision*.

Thus we see before us the beautiful *Luculia*; and with all thy *age*, we “love thee still,” *Luculia gratissima*!

Being suddenly aroused from this ideality with all the vivid splendor of this plant on our mind, we propose telling our amateur friends something about it; and giving our florists a hint in reference to its good qualifications as an attractive, ready-selling plant. Those unacquainted with this plant will be most likely to inquire, what is it like? Do you know the old and much esteemed “*Hydrangea Hortensis*”? Yes. Well, it resembles that plant very much, with this exception: the texture of the foliage being much finer, and the color a lighter green; the large heads of flowers being of a lovely rose color, and highly fragrant.

To be able to appreciate this noble plant adequately, it is requisite to behold it in all its splendor; then the sight never can be forgotten. We

remember once standing by the side of a most magnificent specimen, some eight feet high, and nearly as much in its diameter (at Chiswick), literally covered with its fragrant rose-colored blooms. We also recollect one of the fair sex taking particular notice of the various plants in passing the tables, till she came suddenly on our favorite, when all at once she threw up both her arms and exclaimed, "Oh! oh! is it possible,—can I believe my own eyes!" We expected she would have fainted with ecstasy. The *Luculia* has generally been considered difficult to propagate and flower; so has the *Hydrangea* as a *pot* bloomer; growing too large and oftentimes not flowering at all. This is the character it generally bears, but with our mode of management we never encountered this difficulty. For example, we have a number of the *Hydrangeas* growing in open borders: about the end of September take off the ends of the shoots that are well ripened, with the green foliage on, (three or four joints long), place them in a close frame with a little bottom heat, and in ten to twelve days they are struck; pot into three-inch pots, and when they fill these small pots with roots they drop the leaf. They can be packed away through the winter similar to vines; not allowing them to get *too dry*, or they will die like anything else. In the spring when you require to start them, bring out to the light, and give a good soaking of water; *do not re-pot*, but let them grow in the small pot that they were stored away in through the winter, and generally at the second or third new wood joint they will show the bloom heads; *then re-pot* into a five or six-inch pot, as you please, and make the compost just as rich as it is possible, and afterwards water with plenty of *good guano* (if such a thing is to be got); and the ultimate of this process will be heads of flowers measuring twelve to fifteen inches over, on plants in five-inch pots a little over twelve inches in height. When the soil is strongly impregnated with iron, the color of the flower changes to blue. Iron filings mixed through the potting will answer the same purpose. Now, in reference to the *Luculia*, the cuttings are managed in the same way, with this exception, that we keep them in a greenhouse through the winter on a shelf, rather than a cellar or under a stage, as in the case of *Hydrangeas*.

There is another mode by which the *Luculia* is very easily propagated. Take frames, or pits, put in plenty of good compost, and *plant out* the *Luculia*, and as it grows, *layer it*, similar to the carnation, either in small pots plunged into the soil, or in the soil itself. They root in a very short time, can be taken up, potted into small pots and managed as the cuttings. The stool plant continues growing rapidly, yielding a fresh supply for layers. We have taken several hundred young plants in the season, from three or four stool plants in this way. They will also emit roots freely, if growing in a high moist temperature, by notching the branches, tying moss on the parts and keeping it moist. They strike freely into the moss. This of course is only another method of layering. The two plants grown and flowered together in this way form a charming sight, and command a ready sale.

Won't some of our florists try this *modus operandi* with the *Luculia* and the *Hydrangea*?

The *Luculia* blooms freely through the winter season, and forms a great acquisition for the stove or greenhouse in the spring, and no conservatory should be without it.

GARDEN THERMOMETERS.

URWARDS of a year ago we drew the attention of our subscribers to the important subject of garden thermometers, and pointed out certain improvements therein effected. Since that time, we are happy to be able to note that the attention therein drawn to the subject has been instrumental in effecting still greater improvement, combined with economy. Our friend,



Mr. George Cox, the well-known optician (5, Barbican, London), has specially directed his attention to the improvement of

that most useful instrument, the garden thermometer, and we are glad to say with the greatest success.

We consider Mr. Cox entitled to the best thanks of the gardening public for his exertions in producing so fine and delicate a thermometer at so reasonable a price (3s. 6d.). This simple and accurate instrument is less expensive than registering thermometers previously in use, and equally correct. It shows the temperature at the time of observation, like any other thermometer; and when hung up horizontally, and the floating index tilted to run to the upper end of the spirit, it is set for determining the coldest point reached during the day or night. The spirit collapses over the top end of the index, and draws it down the tube, leaving it at the extremest degree of cold arrived at. The observer will then have the satisfaction of seeing how cold it has been since his last observation, and what is the present temperature.

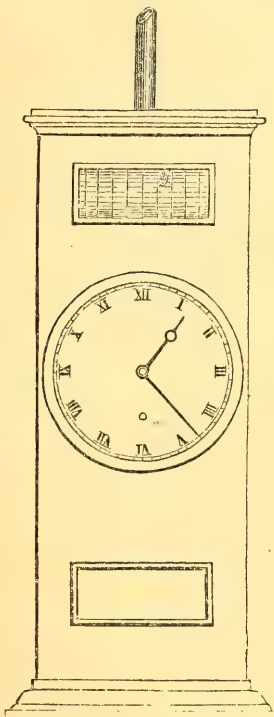
Our experience warrants us in saying that "Cox's garden thermometers" are decidedly the most inexpensive, durable, and correct of any previously in use; and we hope no gardener will neglect to provide himself with so useful a guide in all his operations. The fact is, and it cannot be disguised, that, as a body, horticulturists are not sufficiently alive to the importance of paying close attention to temperature and other meteorological conditions, although in scarcely any profession is it more necessary and beneficial.

A superior instrument has also been brought out by the same eminent maker, being a self-registering thermometer for both day and night, in which each tube is influenced by the same bulb. The centre bulb is filled with pure spirit, which expands by heat, and causes the mercurial column to descend on the left hand (or night) side, and ascend on the right hand (or day) side, carrying the index with it on the surface until the heat is diminished, when the index will be left at the maximum, or highest degree of temperature. This furnishes the registration for the day. For the night, as the temperature is decreased, the spirit contracts, and is followed by the column of quicksilver, which then ascends on the night side, and carries the index on its surface, until it reaches the minimum or coldest point.

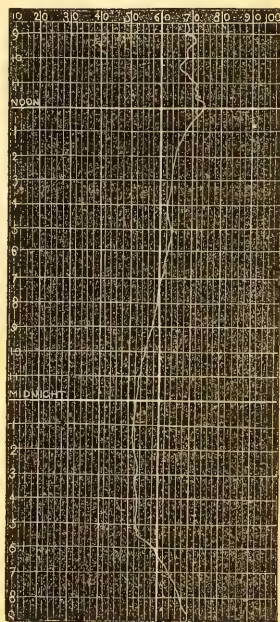
This instrument is eminently adapted for the open air, conservative walls, frames and pits, greenhouses, stoves; and every other erection connected with our "science of horticulture."

A more extraordinary instrument, very valuable, though more costly, is Mr. Gauntlett's new "Patent Chronometrical Thermometer," for horticultural purposes, for keeping a permanent, written record of atmospheric temperature, whether in doors or out. Every proprietor of a greenhouse or stove should possess one of these invaluable articles.

The novelty of this thermometer consists in metallic tubes being used in place of mercury, and in their connection with a clock movement, which puts in motion a drum, to which a strip of paper is attached. The thermometric tubes expand and contract as the temperature varies, and the motion thus produced is conveyed to a pencil that inscribes a line upon a strip of paper. This line is a permanent record of the temperature. When the strip of paper is filled up, a fresh strip is attached. These strips are ruled with lines, as shown in the following diagram; the vertical lines re-



Gauntlett's Chronometrical Thermometer.



Scale traced by Gauntlett's Instrument.

present the thermometric scale. The horizontal lines correspond with the hours of the day and night. This instrument is chiefly valuable for horticultural purposes, where temperature is a matter of the first importance. The strip of paper shows at a glance what the temperature of a propagating-house, greenhouse, conservatory, etc., has been during any moment of the day or night, the precise moment when a change took place, and how long such change continued. The clock movement, which consists of an excellent eight-day timepiece, not only propels the strip exhibiting the temperature, but also shows the time. The action of this thermometer is very quick. Changes of temperature, however slight, are instantaneously indicated; this arises from the large amount of metallic surface exposed to the heated medium. The mercurial thermometer, on the contrary, is very slow in indicating slight changes of temperature. This is owing partly to the substance of the glass opposing an obstacle to the transmission of heat to

a certain extent, and partly to the bulk of the mercury offering so small a surface to be acted upon by heat, which must be diffused throughout the mass before any true indication can be given. This property of instantaneous indication renders the Chronometrical Thermometer peculiarly valuable for scientific purposes; we therefore unhesitatingly recommend it to the gardening public.—*Horticultural Cabinet*.

CALIFORNIA HORTICULTURE.

EDITOR OF THE HORTICULTURIST :—I was pleased to see in your late number an article relative to this extensive field of horticultural enterprise. The author evinces considerable interest and knowledge of California horticulture, and will, I hope, add something to the storehouse of practical wisdom, whose doors are ever open to invite the studious and careful observer. What valuable facts California may yet contribute to this branch of industry and science, and what new and choice varieties of golden and amber fruits, the future will disclose! Already, our orchards and gardens contain peach seedlings of great beauty and rare excellence, which are more popular in our markets than the most favored kinds of established varieties. Our complete exemption from the insect pests which are so fatally destructive to smooth-skinned stone fruits, and particularly that "little Turk,"—as Downing calls him,—the curculio, is an advantage which we would like to share with our eastern friends, in return for the treasures with which our soil is already exulting. But the anxious inquiry naturally arises, will not the curculio sooner or later appear? will not the egg or embryo be introduced in the bark or roots of the trees brought hither from your infested orchards and nurseries? This is a question of much moment, and one that cannot fail to give concern to the propagators and lovers of the plum and the other fruits which are so congenial to this pertinacious little adversary. The borer is the only enemy of moment which gives us much trouble, and he is not difficult to manage. The pear-blight is an enemy, so far as my knowledge extends, from which we are entirely exempt. Our Doyennes, which are not yet abundant, are as fair and free from speck or crack as a lady apple; and so extraordinary in size, that one familiar with the fruit in Boston or New York, would scarce recognize it as of the same family. It is true, the trees are yet young, and their permanent character not quite established, but there is much ground to hope for continued success. The same superiority of size and appearance applies to all the other varieties. I have not, however, noticed any superiority in flavor over the fruits of the Atlantic shores, and question as a general thing, if they are quite equal.

I am much interested in the discussion progressing in your journal, relative to the merits of the quince stock. All the dwarfs of that kind which I have tried and have seen in the Sacramento Valley, are very promising, and are the delight of all. What age may develop in them, it is difficult to say. All large fruits undergo a singular metamorphosis in size, color, season of ripening, keeping qualities, &c., by transplantation from the Atlantic soil and climate to the Pacific, and in some of them they are not improved. Grapes, I think an exception, being improved in all respects: the deep alluvial and volcanic soils seem to be peculiarly adapted to them; and I have found no grape too tender for successful out-door culture;

indeed, I find our own California or Los Angeles grape the tenderest of all. We want only a railroad connecting the Sacramento and Missouri rivers, to make your markets blush with our wines, grapes, figs, pears, and other treasures of the soil, while the winds of opening spring and summer are yet blowing bleakly upon the blossoms and embryo fruits of your eastern hill-side trees.

California is destined to be the cornucopia of the confederated sisterhood, and her inhabitants are inspired with an almost blind enthusiasm in the cultivation of fruits and flowers. The easy working and richness of the soil, the deprivation heretofore suffered for want of these Eden luxuries, and the remunerative, almost fabulous prices which fruits have hitherto commanded, have all conspired to create this laudable enthusiasm.

Our agricultural fairs are as yet doing but little practically to encourage horticulture: money-making seems to be their primary object, and female equestrianism, and exhibitions foreign to the legitimate objects of the institution, seem to secure the principal encouragement. Rag dolls command the consideration and awards of grave committees, while horticultural enterprise occupies a place of secondary moment. What is most wanted in our annual fairs, is what heretofore we have been least able to get—good rational instruction and practical ideas. Men of little or no experimental knowledge are placed upon our committees as judges, because of their *standing in society*, their *scholastic attainments*, or the extensive grants over which they are the speculative landlords. From such committees what encouragement and information is the seeker after substantial facts to gain? In a recent report of the State Agricultural Society, I noticed a premium awarded to a gentleman of this city for "*the best cultivated garden*;" I had the curiosity to visit the place, and found it to consist of a lot 80 by 160 feet in dimensions. This ground contained the dwelling, stables, sheds and outhouses; a hothouse, and a large number of peach trees planted within four and five feet of each other, all over the ground, and looking like so many untrimmed willows, never having been shortened in an inch since they were planted. Their intense shade made them wiry, spindling, and almost destitute of fruit. Under these trees, where the sun's rays never penetrated, were the strawberry beds; but, alas, never a berry, and the vines, consisting of some six or seven kinds, were finally expelled because, never bearing, they were supposed to be barren kinds. Besides the foregoing, there were apple, pear, apricot, cherry, plum, almond, fig, nectarine, locust, ailanthus, grape vines, rose bushes, in great variety, and numerous ornamental shrubs and vines, crowded into the most absurd proximity, and like the others, fruitless and almost blossomless. This confused mass of culture and wicked waste, which would make a skilful gardener grieve, received a premium as the *best cultivated garden*. It was not favoritism that dictated the award, but sheer ignorance on the part of the committee, which did as well as it knew how. Such proofs of incapacity on the part of our committees, cannot fail to be attended with discouraging results. We are seekers after practical knowledge and the right road, and as an unerring guide-board pointing steadily to it, your journal seems to me to be the best indicator of the direction in which the adventurer should tread in his eager search for facts and hidden light. We are too much in earnest to be humbugged by quackery, and should be too prudent to prosecute our work in the dark.

W. C. F., Sacramento.

COTTAGERS' KALE.



PEOPLE may write as they like about this Kale. It is a most excellent vegetable, and when well grown, and used in its proper season, it is delicious. Mr. Turner has not said, neither has my friend Dr. Lindley said, one word too much in its favor ;—I think hardly enough. I cannot avoid remarking, that I think some of the letters respecting it, which have appeared in your columns, were written rather prematurely, particularly as the writers of them had only one season's experience of the plants. Their season of usefulness had not arrived at the dates of some of them. Their perfection and usefulness can be best appreciated when other greens have vanished from wet, frost, and hardship of weather—then, and then only, can the real utility of, and benefit to be derived from, this Kale, be fully known and valued.—*J. C. Lyons, Ledestown, Mullingar, Ireland.*

[The above representation was engraved from a photograph of a fine plant of this Kale shown the other day to the Horticultural Society in Regent Street. It measured four feet in height from the surface of the pot, and was two feet one inch in circumference round the stem, sprouts and all. The total number of the latter was sixty-four. This was one of the most perfect specimens of this in all respects excellent winter green that we have yet seen.]—*London Gardeners' Chronicle.*

[This vegetable has been much commended abroad, but we have not yet seen it.—Ed.]

EDITOR'S TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

AN ESSAY on Grades, Drainage, and Extension of the Public Grounds in the City of Washington, as a system of general improvement. This luminous pamphlet has been sent to us in consequence of the remarks we made in letters from Washington, by Mr. J. Brooks, who we presume is the author. He has a keen sense of the disgraceful state of things there, and gives some information that is truly curious. It appears, for instance, that there are two systems of grades in the devoted city, which conflict at the intersection of streets and avenue, the one conducted by a city engineer, and the other by an engineer employed by the government—a wheel within a wheel, but contrary to the laws of mechanics, the inner acting independently of the outer. The city has taken upon itself to open and grade the streets under the authority of the government, but is unwilling to do anything to the avenues! And so it goes through the whole matter; nothing is done rightly, and the most important affairs are neglected entirely.

Now, the United States have spent a vast amount of money in so-called embellishments, architectural outlays giving the greatest amount of inconvenient and limited “accommodations” at the greatest possible cost, and yet the whole attempt ends in the same manner as if a private individual were to build his costly mansion in a brick-yard, and leave it full of red chips and mud holes.

Our author points out what ought to have been done, and says very justly on the subject of an arboretum: “A thorough knowledge of the vegetable kingdom, from the simplest formation of the *protophyta* to the gigantic *sequoia*, should be inculcated by the institutions of the country generally, whose wide domain is so richly endowed with the most perfect living specimens. And they should be collected together and so arranged that ‘he who runs may read,’ and understand what he does read. This is effected by the formation of *arboretums* and *botanic gardens*. They form a laboratory where the natural elements and the arts combine to work out some of the most abstruse problems incident to the multifarious pursuits of man. Here, the science of botany asserts her prerogatives over agriculture, horticulture, arboriculture, floriculture, and many of the fine arts, while she becomes also the *handmaid* to all. The philosopher, the historian, the geographer, and the naturalist, come here as the peripatetics of old visited the *sacred groves*, to peruse the open book of nature,—the medical student to take counsel of *Hygieia*, the architect to study the ornate, the painter the beautiful, and the poet to realize the creations of imagination. Here the pious feel nearer to Deity, and the vicious awed by the consciousness of His more immediate presence.”

He then examines the good effects of the London parks and other attractive improvements,

and adds: "Let us, with these facts before us, compare the condition of our own metropolis with that of our progenitors." The comparison is very greatly to our disadvantage. Malaria stalks even into the presidential mansion; the garish marble of the public buildings is reflected in the ooze of Goose Creek, echoing back the serenade of frogs! All the talk on the subject is but party juggling—

"That palters with us in a double sense;
That keeps the word of promise to our ear,
And breaks it to our hope."

Our author gives his own views as to the best mode of proceeding, and we are quite disposed to endorse them. Every American citizen must desire that Washington may become his metropolis—the coronal of our own native land, and among nations the brightest gem of empire. With the proper improvements they would become the medium through their refining influence of enlarging the field of productive labor, as *nurseries* of the arts and sciences necessary to a thorough knowledge of agriculture, horticulture, arboriculture, floriculture; in fine, of *botany*, with its numerous correlatives, the acquisition of which would add more to the national wealth, to the quiet, home fireside enjoyments of city and country throughout this broad land, than all other learned professions put together, with *politics* superadded.

We are much indebted to Mr. Brooks for this interesting pamphlet.

MOUNTAINS OF NORTH CAROLINA.—MR. S. B. Buckley has communicated to *Silliman's Journal* a very interesting paper, from which we make the following extracts. Of the *Pyrularia oleifera* noticed in this journal lately, he says: "Among several shrubs which we obtained for cultivation, the *Pyrularia oleifera* or oil-nut is peculiarly interesting. It grows to the height of from five to ten feet, and bears a pear-shaped fruit little more than an inch in diameter, which is so oily that it will burn like a candle if a wick be drawn through it. Squirrels are fond of it, and cattle have a great liking for the young branches and leaves of the *Pyrularia*. Last spring we saw an abundance of it in the edge of some woods fenced into a wheat field, and in October we again went there after the fruit; but the harvest was past,—the field had been pastured with cattle, which had destroyed nearly all of the *Pyrularia*. Hence it has already become rare, and the general occupancy of the mountains with herds of cattle and flocks of sheep would soon destroy it entirely. Mr. Durand, of Philadelphia, thinks that the oil expressed from it is superior to the best olive oil. Our specimens of the *Pyrularia* have been planted at Philadelphia, New York, and at the botanic garden of Cambridge, near Boston, and also some of them have been sent to Paris to the Acclimating Society of France, whose object is to acclimate useful trees, shrubs, and plants."

THE NEW LAWN GRASS.—A correspondent of the *London Chronicle*, in describing the garden of A. Mongredien, Esq., Forest Hill, Sydenham, says: "The gardens attached to this prettily situated suburban residence, though not extensive, are nevertheless in many respects extremely interesting. To Mr. Mongredien belongs the merit of having first pointed out that *Spergula pilifera* (of which a full account was given) was capable of forming an excellent substitute for grass in the formation of lawns. A piece of ground planted here four years ago with this pretty little moss-like Alpine is now, and has been for these three years past, closely covered with a carpet of the richest green—soft and elastic to the tread, and forming a turf equal to that of the finest grass, for which at first sight it might easily be mistaken. Over grass it however possesses many advantages; in the first place, it requires no mowing, and it is reported to withstand the effects of long continued drought better than any grass, remaining comparatively green when the latter has been burnt up. Another point in its favor is its evenness of surface, provided the ground laid down with it has been made so in the first instance—a matter of great importance—for as the plant itself never grows more than a $\frac{1}{4}$ or $\frac{1}{2}$ an inch in height, any inequalities or other defects of formation are ever afterwards perceptible. After planting, the only care that it requires is sweeping and rolling. If left undisturbed it would be

one mass of white flowers in July; but as most people prefer a lawn perfectly green to one covered with blossoms, the latter should be removed by frequent sweepings with a fine besom. A birch broom is too rough for it. In forming a lawn with this plant, Mr. Mongredien's gardener, Mr. Summers, recommends the seeds, which are very small, to be sown behind a north wall, and when up to be transplanted where required, placing the plants regularly over the surface, at say six inches apart. On strong clay it sometimes assumes a yellow hue; but this has been found to be easily converted into a beautiful green by watering with weak liquid manure. Unforeseen disadvantages may yet arise however in connection with the employment of this as a lawn plant; but at present, judging from the little experiment that has been made with it, it certainly promises to answer perfectly, and in an economical point of view, seeing that mowing may be dispensed with, it cannot fail to be highly appreciated. A trial of it on a more extensive scale is now being carried out, the result of which we hope to be enabled to report hereafter. The gardens here, except where the glasshouses are, viz., on the top of the hill, slope abruptly to the north, and it is on this aspect that the plant has been tried."

[Seeds as well as plants of this grass have been received and are on trial in America, and we hope soon to report upon it.—ED.]

RHODODENDRONS.—Success in Rhododendron culture undoubtedly depends mainly upon the soil in which the plants are grown. Not that other circumstances are unimportant, or to be lightly regarded as items in the sum total of success; but a suitable soil being of primary consideration, the remaining conditions must be contingent on that. In general very erroneous opinions prevail as regards soil for Rhododendrons, and plants of analogous constitution and requirements. Possessors of gardens where the soil is naturally unsuitable for them, often lament their inability to combat that difficulty. Yet nothing is easier. The materials for a Rhododendron soil, to speak familiarly, lie at every man's door—certainly in the rubbish yard of his garden. Decayed vegetable matter in a highly comminuted state is the great indispensable; and, possessing this, which every one having a garden does in some form or other, the chief difficulty is overcome. Wherever the refuse of a garden has for years been allowed to accumulate is this decaying vegetable matter to be found, which, when mixed with a portion of sand or sandy loam, will grow Rhododendrons to perfection. Perhaps the most familiar form in which such vegetable matter is known is as leaf mould, and when that can be obtained it is to be preferred to any other. Two parts of this, with one of light loam and one of sand (white if it can be had), will form a compost for Rhododendrons which will leave nothing to be desired. Shade and coolness should be secured as much as possible—not that degree of shade which by permanently intercepting sunlight and air would inevitably induce weak and immature growths, to the destruction of the main end in view, flowers—but such grateful and partial shade as would at once temper heat and husband moisture. No shade is so grateful to the Rhododendron as that produced by trees. Yet they should not overhang the plants, but be sufficiently near to shade, without actually obstructing light.

GOLDEN HAMBURGH GRAPE.—We have now in hand an engraving of this superb grape from a specimen fruited by C. P. Bissell & Salter, of Rochester, N. Y., who are taking a lead in the cultivation of grapes. The vine is young, and produced but the one bunch; the Golden Hamburg is to be one of the choicest fruits in even the smallest selection of sorts, going along with the inevitable Black Hamburg, so universally known.

The same growers favored us with a sample of Childs' Superb, grown under glass. We scarcely think it worthy of a place in the graperie, but where it is a hardy grape, it will take a high rank. See answers to correspondents.

THE APPLE.—*The Pioneer Farmer*, published at Des Moines, contains an admirable paper on the apple, by James Smith, of that place. The lists of fruit adapted to that climate are so far satisfactory, as they are the result of the best experience, but he says: "My own expe-

rience with fruit has convinced me, that, like men, the best have their faults, and that if we look for a perfect fruit, and reject all else, we are doomed to disappointment."

In treating the subject in various aspects, he says: "Is it essential that a fruit should originate on a given soil or climate, to succeed well there? Let us look at the range of latitude that has produced all our popular western sorts: Fulton, from Illinois; Sweet June, Conn.; Early Joe, Jonathan, New York; Red Astrachan, Russia; Townsend, Pennsylvania; Red June, North Carolina; Benoni, Mass.; Duchess of Oldenburg, Russia; Maiden's Blush, Yellow Bellflower, Roman Stem, and Wine Sap, New Jersey; Early Pennock and Raule's Jannet, Virginia; Winter Sweet Paradise, Pennsylvania; Talman's Sweet, Rhode Island; Westfield Seekno further, Conn.; Fameuse, Canada; Keeswick, Coldin, England. The origin of the Lowell, and White Winter Pearmain, is unknown, but so far as I know, have succeeded well wherever tried.

"J. Van Buren, of Clarkesville, Georgia, who is styled the *apple-king* of the South, states, in the last volume of the *Horticulturist*, that his correspondents in Northern Kentucky and Northern Indiana, assure him that southern varieties of the apple withstand the winters there as well as those from the North. My own experience here, with southern varieties is, that they harden up their wood as well in the fall as those from the North, and I have the best authority for saying that this is their character in New York; while the Baldwin, Roxbury Russet, Sweet Bough, Rhode Island Greening, Newtown Pippin, and Ladies Sweet, the very cream of the eastern and northern catalogues, are ground cumberers in Central Iowa. I do not wish to be understood that we must look mainly to a southern climate for varieties adapted to our climate—far from it—but that we may introduce the choice varieties of almost all sections of the Union, with about equal hope of adding to our list of valuable fruits.

"But, in the face of all evidence, the advocates of seedlings will continue on their mission, preaching to the hitherto unfortunate fruit-growers, that, to be successful, they must return to seedlings, and when by a combination of circumstances, (improper selection of trees and sites for orchards, and neglect in planting and after-culture), they have made a few proselytes, they fancy themselves the forerunners of a new era in fruit-growing; and if they, like the 'great Apostle of Terra-Culture,' should demand fortunes in consideration of their great services, and were refused, as was *that messenger*, this, to them, would be one more evidence of the ingratitude of republics.

"The planting of seedlings from excellent sorts, however, is not to be discouraged, as it is only thus that new and valuable varieties can be originated."

A SINGULAR INSTANCE OF ARBOREOUS VIGOR.—Our old friend, Charles Waterton, has commenced to write for the *London Gardeners' Chronicle* with his former terseness and tact. We copy the following curious fact: "Trees in walls are always rude intruders, having no business there. Seeds of trees floating down the torrent, or driven by the wind, will enter crevices of walls, and there take root with scanty means of nourishment. And if the superincumbent pressure of the stones be too strong for the new tenant to lift them up, it will gradually elbow itself out at the junction of the stones, and there in time form an excrescence on the face of the wall, holding the stones in its firm embrace. Dyer, the poet, must have witnessed this at Grongar Hill, when he described the ivy supporting the wall.

'There both a safety from the wind,
In mutual dependence find.'

"But we have here a phenomenon still more striking. It is of a nut-tree supporting a large millstone. About a century ago our watermill of ancient days was destroyed, to make way for supposed improvements; and nothing now remains to show the spot where once it stood, save a huge millstone. For years it lay flat on the ground amongst surrounding cherry-trees, till in the autumn of 1811, some animal, possibly a squirrel, deposited a few nuts at the bottom of the hole in the centre of the millstone. During the following spring one of these nuts began to

germinate, and then raised its puny head out at the hole in the stone. One day I observed to a naval officer who was standing by, that the diminutive plant before us, if it lived and had good luck, would, in time, lift the millstone from the ground where it lay, and then support it. He doubted this. But time has shown that he was wrong in his surmise.

"The young nut-plant improved in health and strength till it entirely filled the cavity of the stone; so that, to the inspecting eye, the wood and stone seemed to form a compact body. It now began to lift the stone. Year after year this massive millstone rose a trifle from earth to sky, and whilst I am writing this, it is now nearly nine inches in mid air. The nuts are excellent, and always full grown; whilst the tree itself which bears them, sets tempests at defiance; and, notwithstanding its gigantic burden, is never seen even to totter when 'the stormy winds do blow.'

"It goes by the name of old Mr. Bull with the national debt round his neck. Facetious appellation! Nevertheless it seems to offer a lesson to the speculative politician, that this millstone must ultimately be smashed by the hand of man, or the tree itself must die of strangulation."—*Charles Waterton, Walton Hall.*

NEW PLANTS.—We have to thank Mr. Robert Buist for a contribution of fine plants which are in season for bedding. Among them the following verbenas: Sir Joseph Paxton, Lady Palmerston, Evening Star, (especially beautiful), Emperor, Lady Fitzroy, Rosy Gem, and Buist's Crimson Perfection. A new double Petunia of great merit, the Heliotrope Buist's Beauty, and four new Lantanas, viz.: Flaviconia, Snow Ball, Marquis de Leparto, and Alba grandiflora. We are also indebted for a large plant of Brugmansia (*Datura*) Knightii; this placed along with the double white makes a very beautiful lawn object, both blooming freely together.

FOLIA ORCHIDACEA, Part VIII. (Matthews, 5, Upper Wellington Street) has appeared with five genera and the commencement of a sixth. To what extent the knowledge of orchids has extended may be judged from the following comparison of species before botanists in 1830 and 1858.

	1830.	1858.
Stelis.....	9.....	135
Oberonia.....	13.....	52
Restrepia.....	1.....	9

LE JARDIN FRUITIER DU MUSEUM.—Nos. 18 to 21, both inclusive, of this handsome work have appeared, exclusively occupied by figures and descriptions of pears. Among the more interesting are the Poire de Pentecôte, with its aliases carefully worked out; the Duchesse d'Angoulême, once called Poire des Eparonnais; the Goulu Moreceau, or as we call it, apparently improperly, Glou Moreceau, originally brought out in 1759, but long overlooked notwithstanding its rare merit; Poire Tonneau, a stewing kind.

FLORE DES SERRES for December, 1857, has been published with original figures of the *Tom Thumb Tropæolum*; de *Pompon de Tirlemont Larkspur*, a handsome variety of the Siberian; some superb looking varieties of *Dianthus chinensis*, which, as Mr. Van Houtte observes, would have been regarded as Japanese lying wonders had not the Horticultural Society of St. Petersburg stamped them with authenticity by giving them a gold medal; moreover, M. Regel, a name of weight, declares that he saw hundreds of them in flower with a Mr. Heddewig, and guarantees their being all that has been represented. Imagine flowers, thirty on a plant, of the deepest crimson, or crimson streaked with white, and three inches in diameter! We see that Mr. Van Houtte has seed on sale. Another plate represents what is called *Dianthus sinensis laciniatus*, another variety with enormous flowers, one form of which is single, pale, and lilac, the other smaller, the color of an Opium Poppy, but double; both being cut and slashed into numerous long sub-divisions. It is announced that the arrear of the *Flore* for 1858 will be

made up by the end of April, after which the numbers will appear with the same regularity as formerly.

ON THE COILING OF TENDRILS.—As much as twenty years ago, Mohl suggested that the coiling of tendrils “resulted from an irritability excited by contact.” In 1850 he remarked that this view has had no particular approval to boast of, yet that nothing better has been put in its place. And in another paragraph of his admirable little treatise on the vegetable cell (contributed to Wagner's “Cyclopædia of Physiology”), he briefly says: “In my opinion, a dull irritability exists in the stems of twining plants and in tendrils.” In other words, he suggests that the phenomenon is of the same nature, and owns the same cause (whatever that may be) as the closing of the leaves of the Sensitive plant at the touch, and a variety of similar movements observed in plants. The object of this note is to remark that the correctness of this view may be readily demonstrated.

For the tendrils in several common plants will coil up more or less promptly after being touched, or brought with a slight force into contact with a foreign body, and in some plants the movement of coiling is rapid enough to be directly seen by the eye: indeed, is considerably quicker than is needful for being visible. And, to complete the parallel, as the leaves of the Sensitive plant, and the like, after closing by irritation, resume after a while their ordinary expanded position, so the tendrils in two species of the Cucurbitaceæ, or squash family, experimented upon, after coiling in consequence of a touch, will uncoil into a straight position in the course of an hour; then they will coil up at a second touch, often more quickly than before; and this may be repeated three or four times in the course of six or seven hours.

My cursory observations have been principally made upon the Bur-Cucumber (*Sicyos angulatus*). To see the movement well, full-grown and out-stretched tendrils, which have not reached any support, should be selected, and a warm day; 77° Fahr. is high enough.

A tendril which was straight, except a slight hook at the tip, on being gently touched once or twice with a piece of wood on the upper side, coiled at the end into $2\frac{1}{2}$ —3 turns within a minute and a half. The motion began after an interval of several seconds, and fully half the coiling was quick enough to be very distinctly seen. After a little more than an hour had elapsed, it was found to be straight again. The contact was repeated, timing the result by the second-hand of a watch. The coiling began with four seconds, and made one circle and a quarter in about four seconds.

It had straightened again in an hour and five minutes (perhaps sooner, but it was then observed); and it coiled the third time on being touched rather firmly, but not so quickly as before, viz., 14 turns in half a minute.

I have indications of the same movement in the tendrils of the grape vine; but a favorable day has not occurred for the experiment since my attention was accidentally directed to the subject.

I have reason to think that the movement is caused by a contraction of the cells on the concave side of the coil, but I have not had an opportunity for making a decisive experiment.—*Prof. Asa Gray, in the Proceedings of the American Academy of Arts and Sciences.*

THE ILLUSTRATED BOUQUET, published by Messrs. Henderson, of the Wellington Road, London, improves with time. Part V. contains some very remarkable things extremely well figured. First and foremost is a capital figure of the Bootan Rhododendron, called *R. Nuttallii*, certainly one of the most glorious plants in cultivation, not yielding precedence to even *R. Dalhousianum* itself. With noble leaves of the largest size it bears masses of golden-eyed snow white flowers, represented in the drawings of eighteen inches round the edge, and actually in a dried specimen before us, measuring something more; a real goddess this among the crowds of inferior deities that follow in the train of Flora. Unfortunately the species is strictly greenhouse, not being able to bear even an inconsiderable degree of frost. It is probably the same as the Rhododendron found by Griffith in Bootan, on the ascent to Chupcha, grow-

ing in a wood of *Quercus ilicifolia*, at an elevation of 8,000 to 8,500 feet, and described as a small tree.

The second plate is occupied by a very good figure of *Tritoma Uvaria*, that gorgeous autumn hardy plant which has recovered its long lost reputation in consequence of having been taken into the favor of royalty at Osborne. The author of the remarks accompanying the plate makes five species of *Tritoma*, and three varieties of *T. Uvaria* itself.

A third plate is filled with huge flowers of four new Indian Azaleas, from the pencil of a Belgian artist; viz., Leopold I. and Duc de Brabant, rose-colored and much alike; *Etoile de Gand*, pink, with a few spots of carmine; and *Reine des Panachées*, white, streaked with crimson, apparently rather coarse and too much like other stripes now in cultivation.

The last plate includes a variety of *Gardenia radicans*, and a very fine representation of Messrs. Lee's beautiful *Torenia* now called *pulcherrima*, without exaggeration.

WEEDS AND WEEDING.—Now is the time that good gardening tells on the whole succeeding season, and it will be useful to read and reflect on the following from "Burgess's Amateur Gardener." If you don't mow your lawn frequently nothing will look right, and if your weeds obtain the mastery, the whole of your labor goes for little or nothing.

"How does your garden get on?" is a question often followed by the reply, 'Oh, I am sorry to say it is smothered with weeds!' a confession too often corroborated by actual inspection. A garden properly treated in reference to weeding is comparatively a rare sight, except in large establishments. We often see ground well laid out, and not deficient in valuable plants, which are, indeed, smothered with sowthistle, groundsel, and chickweed. This state of things often arises from the peculiar arrangements people make with their gardeners, who visit the place perhaps once or twice a week. The consequence is, that weeding is often postponed to other matters which are more pressing, and the noxious productions are allowed to grow rampant and run to seed. A second crop of weeds may thus often spring up before their parents are dead, until the long deferred opportunity be presented; a desperate onslaught is made on the enemies, and for a few weeks a more decent aspect is secured. If, in all cases where the labor of a gardener is not sufficient, enough supernumerary help were secured, to prevent weeds getting ahead, the benefits would soon be manifest. We should like to see it acknowledged as indispensable, a *conditio sine qua non* in gardening, that no weed should be allowed to show a flower; for although this would not be all that neatness demands, the end would at length be attained, since without flowers there will be no seeds, and extermination must be the natural result. Let the amateur consider, first, how impossible it is to secure a pleasing appearance in the garden if weeds are allowed to grow, however small they may be. Compare the appearance of two beds, one quite clear and fresh raked, with another, sprinkled with weeds just displaying their cotyledons. However diminutive these may be, they mar the beauty of a parterre, and therefore should not be allowed to grow. Secondly, it should be borne in mind that rank weeds injure all growing crops, by taking from the soil that which is intended to secure their perfect development. It is vain to apply manure, if weeds are allowed to steal it. Thirdly, weeds which come to maturity send their roots deeply, and are not to be eradicated without considerable labor. Try to pull up thistles, for instance, and they will break off at the crown, only to furnish an abundant second crop, in a few days; to be prevented doing further mischief, the root must be dug up, which, in a garden of any size, will be a work of time and labor. Fourthly, weeds are very prolific, and if allowed to bear seed, some years may transpire before the effects are obliterated. These four considerations ought to be forcible enough to induce every gardener to resolve that he will henceforth give no quarter to weeds. As it is the expense which is often alleged as the grand impediment in the way of weed extermination, let the gardener compute the difference between a constant hoeing, &c., to prevent the growth of thieves, and the hard-tasked labor demanded to clear the ground when they are grown, and he will find, in a pecuniary point of view, the advantage is on the side of cleanliness. There can

be no doubt which is really the cheapest mode, when the superiority of clean crops is considered. Ply the hoe, then, well, rake your beds often, and you will reap great benefits. If in any case great weeds have grown up, they had better be cleared away by hand, for if allowed to fall on the soil, they often take root again, or shed their seeds before they can be raked away.

THE SCENT OF A STRAWBERRY BED.—June brings its strawberries with much more certainty than most fruits, and while our pages are flying through the land on the wings of the modern iron-horse, it may be hoped that the line upon line and precept upon precept that this journal has enforced are now giving full and plenty of strawberries and cream to all who read it. But did ever anybody smell the scent of a strawberry bed when its leaves are fading, except good Lady Ludlow?

The authoress of "Mary Barton," and the "Life of Charlotte Bronte," has penned a series of tales entitled "Round the Sofa," from which we make a short extract for the sake of its relation to our topics, and because, in the language of another, "It is like a draught of good clear ale to a stomach surfeited with ginger-beer and lemonade."

"Attar of Roses, again, Lady Ludlow disliked. She said it reminded her of the city and of merchants' wives,—over-rich, over-heavy, in its perfume; and Lillies of the Valley somehow fell under the same condemnation. They were most elegant and graceful to look at (my lady was most candid about this); flower, leaf, color—everything was refined about them but the smell; that was too strong. But the great hereditary faculty on which my lady piqued herself, and with reason—for I never met with any other person who possessed it—was the power she had of perceiving the delicious odor arising from a bed of strawberries in the late autumn, when the leaves were all fading and dying. 'Bacon's Essay' was one of the few books that lay about in my lady's rooms; and if you took it up and opened it carelessly, it was sure to fall apart at his 'Essay on Gardens.' 'Listen,' her ladyship would say, 'to what the great philosopher and statesman says:—'Next to that (he is speaking of violets,) my dear, is the musk rose, of which you remember the great bush at the corner of the south wall, just by the blue drawing-room windows. That is the old musk rose,—Shakspeare's musk rose—which is dying out through the kingdom now. But to return to my Lord Bacon: 'Then the strawberry leaves, dying with a most excellent cordial smell!' Now, the Hanburys can always smell this excellent cordial odor, and very delicious and refreshing it is. . . . My dear, remember that you try if you can smell the scent of dying strawberry leaves in this next autumn. You have some of Ursula Hanbury's blood in you, and that gives you a chance.'"

RIVERS ON ORCHARD HOUSES.—To the temporary displacement of several esteemed articles from correspondents, we have made room to-day for about one-half of Mr. Rivers' extremely interesting and agreeable little book, from the fifth English edition, on Orchard Houses. It has not been previously published in this country, and as it is desirable to make the *Horticulturist* a work of reference for the future as well as interesting for the present, we take particular pleasure in introducing the subject so fully and ably to our readers. We find the following description of an Orchard House at Sydenham, England, in a late London periodical, showing the practical character of the operation.

"Among glass houses is an orchard house filled with beautiful little fruit trees in pots, now in full blossom, with the exception of the apricot-peach on which fruit is already fairly set. All are in 12-inch pots, not placed on beds of rich soil into which the roots are allowed to pass, but set on wooden stages or shelves, and liberally fed with liquid manure. Thus managed they bear abundantly, each peach and nectarine having on it from sixty to seventy fruit, and one had as many as eighty on one tree. The fruit, too, tasted in comparison with that from walls, proved the better flavored of the two. Plums bear most abundantly, as do also pears. The French plan of inserting fruit buds on barren spurs or naked branches has been largely practised here both in and out of doors, but with what result has yet to be proved, the work being only just completed. It may be mentioned that although this house is furnished with a hot water appa-

ratus, yet it is not used except in very severe winters. It has therefore not been required this season. The pots are mulched with old cloth waste, which costs 3s. 6d. per sack. It has a clean and neat appearance, keeps the soil from drying too rapidly, and from being washed into holes by repeated waterings. Among the pots in which the trees are growing are placed bedding plants, of which large quantities are required here in summer."

NEW ROSE.—The new rose, Dr. Kane, promises to rival the Salfaterre. Specimens of the bloom have been forwarded us by Mr. Pentland, of Baltimore, which we have not seen rivalled in this climate. It is to be brought out next season, and will, we are confident, become an immense favorite.

THE PROSPECTS OF FRUIT were probably never better than at the present time. The pear and cherry-trees, as a correspondent remarks, "are a perfect spectacle."

THE PEAR.—Mr. Hovey does not answer Dr. Russell's sustained charges respecting that "Boston pear" of his, but as was to be expected, contents himself with snowballing respectable people (one of whom H. knows perfectly well is abroad) through his lowest scavenger. Very like. What is the *price* of the newest and best pear with the aroma of "*champagne*?" Is it champagne made from apples, or grapes? Can it be possible that Mr. H. aspires to be president of the Massachusetts Horticultural Society?

NEW REMEDY FOR THE CURCULIO.—Beat carpets under the tree every Saturday during the month of June!

MARY.

CATALOGUES, &C., RECEIVED.—The season for the issue of new catalogues of trees and plants has waned. The following are all that have come to hand.

Supplément aux Catalogues de Vilmorin-Andrieux et Cie, Quai de Mégisserie, 30, a Paris.

This contains many novelties, and also interesting remarks on plants which have already been introduced.

State Agricultural Journal, extra,—List of Premiums and Regulations for the 19th Exhibition, Oct. 4, 5, 6, 7, 1859. Judicious as usual.

Annual Report of the Agricultural Society of New Jersey, for 1858; from Wm. M. Force, Secretary. A very interesting and valuable report.

Reports of the committees for 1858, of the Rhode Island Horticultural Society, and the schedule of premiums for 1859. This Society is one of activity and importance. All their doings strike us favorably, and this pamphlet confirms our good opinion. The pamphlet contains a very proper and feeling obituary of the late President of the Society, Stephen H. Smith, Esq.

"New Catalogue des plantes, exotiques, nouvelles, et rares," cultivated by Linden, of the Royal Zoölogical and Horticultural Society of Brussels. The skill and enterprise of this indefatigable naturalist have long since placed him among the very highest of those plant *merchants* to whose efforts our gardens have of late become so deeply indebted; and the list now before us completely justifies the European reputation which our estimable correspondent has most deservedly obtained. The list commences by a description of thirteen new stove and greenhouse plants, of great beauty, now offered for the first time, among which *Beloperone violacea*, *Cuphea ocyroides*, *Centradenia grandifolia*, *Arachnotrix rosea*, *Lindenia rivalis*, and three superb *Begonias* called *amabilis*, *argentea*, and *Victoria*, are represented by colored figures, themselves examples of artistic skill. There are also seven new fine-foliaged plants, all from tropical or temperate America. Twenty entirely new and highly decorative plants in one season are in themselves evidence of the vigor with which Mr. Linden prosecutes his system of importation from distant countries. Of plants more or less known the catalogue contains, of fine-foliaged species, 164; of variegated plants, 96; of flowering stove plants, 620; of tropical "fruit" trees, 105 (but this does not always mean edible fruit); of exotic useful, including medical plants, about 150, among which are many of great rarity; of *Araliads*, between 30 and 40; nearly 50 *Bromeliads*; of *Ferns* and *Lycopods*, 343, of which 37 are tree *Ferns*, and

above 60 quite new, and for the most part extremely handsome. Moreover there are nearly 600 orchids, some of which are very rare, and we believe quite unknown in this country. We observe an announcement by Mr. Linden that he has now withdrawn his collectors from tropical America, and is receiving consignments from Cochin China, Celebes, and Mindanao.—*Gardeners' Chronicle*.

ANSWERS TO CORRESPONDENTS.

"When apples or pears are grafted on the limbs of old trees, do they not invariably bear the third year? often the second? and sometimes even the first year?"—Answer—Yes. "Now if such be true of the limbs of old trees for stocks, would not the same hold true of the roots of old trees?"—Answer—No: no more than it holds true because beefsteak inserted into the human mouth goes into the stomach and is digested, therefore, inserted into the ears it would be equally nutritious to the system.—"In other words, if root-grafting be employed on the roots of old or matured trees, will not the graft bear as early as when grafted on an old limb?" Answer—No. "Have any of your readers sufficient personal experience in grafting on old roots to answer this question?"—Answer—Plenty of people. This subject of root-grafting, or seedling-stock grafting, was question 9 at the January meeting of the *Fruit-Growers' Society of Western New York*, and the experience of 200 of the best fruit-growers in western New York, was without exception in favor of seedling-stock grafting "as respects growth, durability, and productiveness," and no one advocated using the roots of old trees. See that report on p. 104. "And if it be true, would not the pear grafted on the old pear root be hardier than when grafted on the quince? and productive at an earlier age? and as long lived as the pear-tree itself? Does it not stand to reason that such is the fact?"—Answer—As it is *not* true, these questions answer themselves. A standard pear as grown in our nurseries now, is long lived.

"2d. Would that tree be an acquisition to the horticultural world as a stock for dwarf or other purposes?"—Answer—This can only be made certain by actual experiment; but as we now graft the cherry on Mahaleb stock, and it grows beautifully, the probability is that Mahaleb is good enough.

"3d. I had determined to plant forty or fifty pear-trees, but want to know the best on the quince."—Answer—Duchesse d'Angouleme, Vicar of Winkfield, Beurré Diel, Louise Bonne de Jersey, Buffam, Kirtland. Second six. Van Mons Leon Le Clerc, Golden Beurré of Bilbao, Baronne Mello, Doyenne Goubault, Beurré d'Amalis, English Jargonelle. Some think highly of Urbaniste, &c. These 12 are the result of experience.

An occasional and valued correspondent in Oneida Co., N. Y., whose contributions we hope often to receive, has addressed us in relation to the Childs' Superb grape.

We had inquired of Mr. Bissell about it, and published his kind answer lately, and this gentleman, who has eaten the grape every season for eight or ten years, fully bears out Mr. B. in all he says.

1st. As to foreign origin, although some claim it to be a pure native, and hardy. Mr. B. has sent us some leaves which prove beyond dispute its foreign origin, and that if it is a seedling, it is from seeds of foreign vines of the Chasselas family.

2d. As far north as Utica and Rochester it needs protection in winter.

3d. Under glass it is fair.

4th. South of where Catawba always ripens well, it will prove very valuable for out-of-door culture.

While there are so many propagators of grape-vines who from interested motives will insist that any pet grape of theirs is pure native, and hardy, we are glad to receive corroborations of Bissell & Salter's endeavors to state things just as they are. The editor of the "Country Gentleman," in quoting the opinions of Mr. H. E. Hooker, (a Rochester nurseryman), says that he "has the reputation of always adopting and advocating opinions without respect to his per-

sonal profit;" and it is important, when the public are purchasing so many of these new varieties, that they should know just what they are buying, and have confidence in the gentlemen who furnish the sorts.

Gossip.

CLIMATOLOGY.—It is the general opinion that all parts of this continent are formidable from their severe climate at such latitudes as we know the Canadas and Salvador to be formidable, while in truth these districts afford no guide whatever to the climate of the interior and west coasts. Deriving our ideas from like geographical positions in Europe, we may see that at the West ten degrees of latitude does not more than express the amelioration of those areas over the areas at the East. The winter of Norfolk is transferred to Puget's Sound, that of Washington nearly to Sitka, latitude 57° , the highest observed point of the Pacific coast—the one ten degrees, the other eighteen degrees of latitude of difference. The plains of the Missouri, &c., afford contrasts with the land areas of the East nearly as great, and in the train of each of these general facts the most important industrial and commercial results must follow. Precision in the knowledge of vast areas where our advancing population is soon to go, is one of the great advantages to result from climatological studies, such as those of Mr. Blodgett and Franklin B. Hough, of Albany. The former has written a successful book; and the latter, in a pamphlet some time since published at the capital of the State of New York, has an amount of popular and valuable information, that is much to his credit as an observer as well as a philosopher.

IRVING PARK.—A novel and very admirable idea is in process of being carried out at Tarrytown, on the Hudson. About one hundred acres of ground, adjoining Sleepy Hollow—made memorable by Irving's pen—have been converted into a park, which, when finished, will contain carriage drives of several miles in extent, neatly kept walks for promenaders, and spacious lawns and sloping terraces where children can play and gambol. Within this park are villa sites, from one or two to six or eight acres in extent, which are for sale; and each purchaser will not only possess a charming homestead, but, also, be guaranteed all the privileges of the park, which ground will be for the use and benefit and under the control of the owners of the sites. It is scarcely necessary to speak of the natural scenery which surrounds this park—enough to say that it commands extensive views of three counties, and of the entire sweep of the Hudson for several miles.

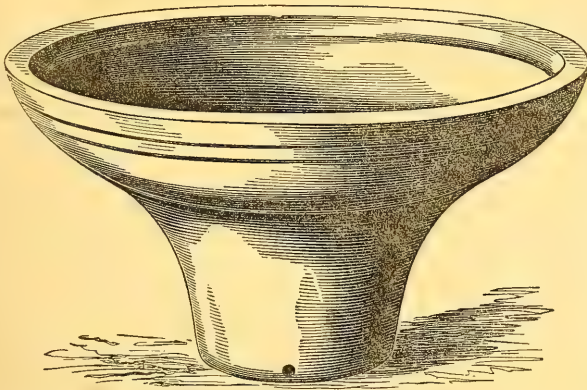
This system of united effort will become the custom when its advantages are more disseminated.

RAIN is derived from a permanent source, viz., the waters of the globe, and chiefly the ocean, whence it is raised by evaporation, occasioned principally by the action of the sun's rays. The air is the vehicle in which it ascends in the state of invisible vapor, and the higher the temperature of the air the more vapor it will carry. Thus, at 66° Fahrenheit, each cubic foot of air will hold in solution fully seven grains of water; but at 45° , little more than half that quantity. It is therefore evident that if air at the former temperature, and completely saturated, be cooled by contact and mixture with colder air, the same quantity of moisture can no longer be maintained. If the warmer and colder portions have each as much moisture as they can carry, and if that at 66° should be cooled down, say to 45° , it must then part with half its load, unless the cold air mixing with the warmer is in a comparatively dry state, and then a portion at least of the superfluous moisture will be absorbed.

The general theory of rain may be expressed in a few words: it is vapor raised by heat and condensed by cold. In fact, the Huttonian theory, the one mostly approved, amounts to this. Some, however, attribute a considerable share of the process to electricity.

RYE—SEA WEEDS.—We find in the *Bulletin* of the Natural History Society of Lausanne, a notice of a single plant of rye, self-sown in a vineyard near Villeneuve, which produced 2248 grains. And we may call attention here to the prize offered through the Society of Arts for the best paper on sea-weeds: competitors are required to discuss the subject of marine algæ, with regard to their utility as food and medicine, and for industrial purposes. We can tell them of a use to which one of the weeds—that known as *alga marina*—has been applied at Brest; namely, as wads for small-arms and cannon. The weed is washed and dried to prevent the absorption of damp, and it has the advantage of being elastic and incombustible.

Correspondence.



MR. EDITOR:—I found, some time since, a description of a verberna pot, and have had one made which I find extremely useful. It has a drain hole, and sufficient depth for the roots, while the surface being large, a mass of bloom may be secured, and combinations, variety of colors, or single colors may be introduced, as taste may indicate.

Bury the pot in the earth, leaving a few small stones

around the opening to secure sufficient drainage.

It was invented I think for seedlings, but I use it entirely as a pot for the lawn, &c., &c., and to bring into my plant cabinet in winter.

Yours, &c.,

W. W. T.

NOMENCLATURE OF PEARS.—I wonder, very seriously, Mr. Editor, whether we shall ever be able to say that the time has arrived when the nomenclature of our fruits is perfectly free from confusion? At present, the prospect is not very encouraging; for, although within ten years past much has been done towards effecting such a consummation, there is still a large number of fruits whose names are in a very uncertain condition. Some pears are so particularly unfortunate in this respect, that no two authorities can be found to agree upon their proper cognomens. Had we in this fair country an experimental garden, we might hope to make more rapid progress in this important branch of pomological science, but in the absence of the best method of accomplishing the desired object, we must await the slow and not always satisfactory results of individual experiment.

I am led to these reflections by my own recent experience. Having a great fondness for pomological study, as well as practice, I have been lately devoting some leisure hours to a comparison and examination of authorities, with a view to solve to my own satisfaction, if possible, the doubts which obscure the fair names of certain varieties. In this attempt I do illy succeed, and find myself so completely puzzled by contradictory assertions and descriptions, that I have determined to state one case, to the solution of which my moderate extent of pomological lore is totally inadequate, in your pages, in the hope that pomologists of more age and experience may give their opinions upon it.

In Mr. Downing's work the *Beurré de Beaumont* is described as a "highly delicious" pear, medium, roundish, obovate; ripening in October: and the *Bezi Vaet* as a medium, obovate variety; ripe from November to January, but ranking only as "a good second rate" sort.

In the revised edition of the same work, the latter description is reproduced without alteration, and *Beurré de Beaumont* placed as a synonym, while upon another page I find the same outline which in the former edition was used for *Beurré de Beaumont*, placed under the name of *Beymont*, with the synonym of *Beurré Bieumont*, which is described as "medium, or above obovate, truncate, or obtuse pyriform;" ripe from October to December; and "gives promise of great excellence." In the same work, *Beurré Le Fevre* (synonym, *B. de Mortefontaine*) receives this brief notice: "Fruit large, irregularly oval, very transient, not valuable."

Mr. Hovey, in his fruits, gives a description of the *Beurré Beaumont*, which agrees nearly with that of Mr. Downing of the *Beurré de Beaumont*, and speaks of it as "a most excellent pear." He gives as synonyms, *B. Le Fevre* and *B. de Montefontaine*. If, as I presume, *Mortefontaine* and *Montefontaine* are intended to mean the same thing, there is a wide difference in the two characters ascribed to the variety.

A pomological congress was held at Lyons, (France), in 1856, a notice of which is given in "*Hovey's Magazine*" of the following year, with a list of names and synonyms of pears, as established by that body. Among them is *Beurré Beaumont*, with the following synonyms, *B. de Beaumont*, *Beymont*, *Belmont*, *Bezy Waet*, *Bezy de St. Wast*; appended to this is a note by Mr. Hovey, to the effect that, "*Bezy Waet* is the proper name; *Belmont* is one of Mr. Knight's."

Again, in Leroy's catalogue, *Beymont* is placed as a synonym of *Beurré de Rance*; ripe from January to April, while *Beurré de Beaumont* is a synonym of *Bezi St. Vaast*, and spoken of as "medium, first quality, December to January." And *Beurré Le Fevre*, with which *B. de Mortefontaine* is synonymous, is classed among the cooking pears, as "medium, third quality; September and October."

If I am not mistaken, I have heard Col. Wilder state that *Bezi Vaet* and *St. Vaast* were identical, some years since, so that we have all these conflicting statements to choose from. If the same pears are cultivated by each under the same names, some one is wonderfully mistaken about the quality and season.

DOWNING:—*B. de Beaumont*, Oct. ; *Bezi Vaet*, Nov. to Jan.

CHAS. DOWNING:—*Bezi Vaet*, *B. de Beaumont*, Nov. to Jan. ; *Beymont*, *B. Bieumont*, Oct. to Dec; *B. Le Fevre*, *B. de Mortefontaine*.

HOVEY:—*B. Beaumont*, *B. Le Fevre*, *B. de Montefontaine*, Sept.

POM. CONGRESS OF LYONS:—*B. Beaumont*, *B. de Beaumont*, *Beymont*, *Bezy de St. Wast*, *Belmont*, *Bezy Waet*.

LEROY:—*B. de Rance*, *Beymont*, Jan. to April; *Bezi St. Vaast*, *B. Beaumont*, Dec. to Jan. ; *B. de Mortefontaine*, *B. Le Fevre*, Sept., Oct.

WILDER:—*Bezi Vaet*, *St. Vaast*.

Now, Mr. Editor, is not all this extremely unsatisfactory? I shall not attempt to reconcile the contradictory descriptions, but trust to some one more capable than myself. If such an one will take the trouble to solve the problem, he shall receive the thanks of

A YOUNG POMOLOGIST.

DEAR SIR:—Will some of your readers, who can suggest a remedy to prevent the flow of sap, or "bleeding," as it is usually called, from the grape-vine, when cut or broken, favor us by communicating their experience, that if anything new is successful, growers of this excellent fruit may have the benefit of it? And oblige,

FRANCIS A. BROWER.

Woodland Park, Mass.

HOW TO INCREASE THE SIZE OF FRUITS.—By A. DUBREUIL.

[Translated from the "Journal de l'Academie d'Horticulture de Gand."]

SEVERAL persons having requested information as to the processes by which we may increase the size of fruits, we shall here point out the principal operations for obtaining this result.

1. *Grafting the Trees on a weak species of Stock.*—Fruits, like leaves, have the power of attracting the sap from the roots, and of transforming it into cambium, or organizable matter. But contrary to that which takes place in the leaves, they employ all the cambium which they thus elaborate for their own nourishment. If the stock on which the tree is worked is naturally possessed of great vigor, the tree will produce numerous long shoots which will appropriate the greater portion of the sap, to the detriment of the fruits, which will consequently not attain a large size. They will, on the contrary, acquire a larger size if their absorptive power can counterbalance that of the shoots. It is for this reason that, all other things being equal, the fruit of trees worked on the quince stock is larger than that from trees worked on the pear stock. The same thing takes place with regard to apple-trees grafted on the Paradise, as compared with those on the Crab stock.

2. *Subjecting the Trees to a Proper mode of Pruning.*—This operation, when well performed, has the effect of depriving the trees of a certain portion of their shoots. Hence it follows that a great portion of sap which would have been absorbed by the parts cut off goes to increase the size of the fruit. The object of summer pruning is likewise the complete or partial removal of a large number of shoots by disbudding and pinching. These operations also contribute to turn the sap to the benefit of the fruit; and under like circumstances, the fruit of well pruned trees is always larger than that from trees left unpruned.

3. *Operating so that the Bearing Shoots may be as short as possible, and in immediate connection with the main branches.*—If the mode of pruning adopted is such that the bearing shoots immediately proceed from the principal branches, the consequence is that the fruit receiving the sap more directly from the roots acquires a larger size. In fact, it is seen that fruit growing on the stem is always larger than that situated at the extremities of long slender branches.

4. *Thinning the Fruits when too numerous.*—The quantity of sap, disposable for the growth of the tree, does not increase in proportion to the fruit which it bears. It is, therefore, apparent that the more numerous the fruits, the less the amount which each receives. Hence the utility of thinning, in order that those retained may be better nourished and become larger. The proper time for performing this operation is when the fruits are fully set.

5. *Shortening the Principal Branches.*—If the length of the principal branches is to a certain extent diminished by shortening them at the winter pruning, a result analogous to that produced by ordinary pruning will follow; but the effect on the fruit is much more intense because the action of the sap is confined within narrower limits. It is, however, important to check in summer the vigorous shoots, of which a great number will be sure to make their appearance, otherwise they would absorb a large amount of sap to the detriment of the fruit.

6. *Supporting the Fruits so that their Weight may not cause a strain upon the Footstalk.*—The sap from the roots enters the fruit by means of vessels passing along the footstalk, and which ramify to an infinite extent throughout the cellular mass. Bulky fruits, such as pears and apples, soon attain such a weight that they exert a strain on their footstalks, which, by tightening the woody fibres and vessels, tends to collapse them. The tissues of the stalk being thus compressed, the passage of fluids is, to some extent, obstructed in that part. Moreover, if fruits are attached to a branch having a more or less vertical direction, their gravity will cause a bending of the stalk, and will thus still further obstruct the passage of the sap. Again, it often happens that the fruit does not make an equal growth on both sides of its longitudinal axis, and a twisting of the stalk and strangling of the vessels take place, in consequence of which the circulation is partially intercepted. Now, if a support is placed beneath the fruit so as to prevent these effects on the stalk, it is very evident that the sap will flow in much greater abundance into the fruit, which will then become larger. This is the reason why those fruits which accidentally rest on branches or trellises are always of greater size than the rest.

7. *Moderating the amount of Evaporation from the Fruit.*—In order that fruits may swell, their epidermis or skin must be continually expanding, so as to make room for fresh tissues which are forming in the interior, and the new fluids that are accumulating there. If all the parts of fruit are directly exposed to the full force of the sun and the drying action of the air, it will lose by evaporation an amount of fluid nearly equal to that which it receives from the roots, and its growth will therefore be less rapid. On the other hand, the tissues nearest the outside will acquire a greater degree of firmness, and lose to some extent their elasticity; they will offer more resistance to the expansion of the interior tissue, and will consequently restrict the growth of the fruit. If, on the contrary, the latter is kept in the shade, these influences will not affect it, and it will become larger. Indeed, this may be observed in the greater proportion of fruits covered by leaves as compared with those on the same tree, not so covered. It is necessary, however, in order that shading may not affect the quality of the fruit, to expose

the latter when full grown to the direct action of the sun. To diminished evaporation must also be attributed the considerable increase in size which always takes place in fruit introduced into bottles soon after it is set. The mouth of the bottle being closed after the portion of branch with the young fruit is introduced, the latter is secluded from the drying action of the air, and is constantly surrounded with a moist, warm atmosphere, which keeps the epidermis pliable, and stimulates the growth of the tissues.

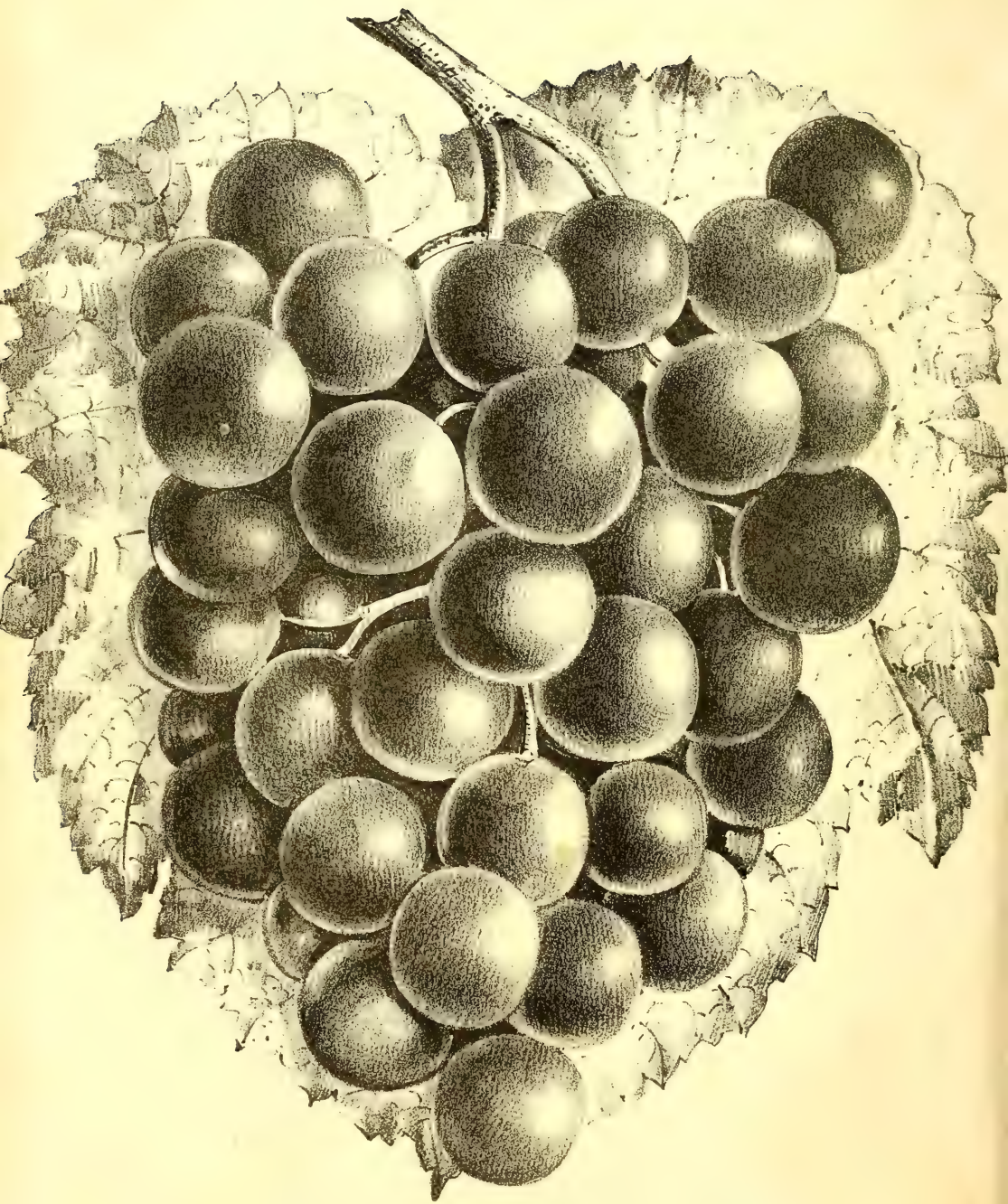
8. *Moistening the fruits with a Solution of Iron (copperas).*—We have already stated that fruit has the power of drawing towards it sap from the roots. If means can be found of stimulating its vital energy it will be perceived that it will absorb a greater amount of sap and attain a larger size. Now, M. Eusébe Gris has proved that a solution of sulphate of iron applied to the leaves has the effect of increasing their absorptive powers, and stimulating their cellular tissue; and it was only reasonable to suppose that salt would produce the same effect on the fruit. This, indeed, has been ascertained by M. Arthur Gris, who has continued the interesting researches of his father. He has proved that melons, and various species of fruit trees, the green parts of which had been watered on several occasions with a weak solution of sulphate of iron, yielded much larger fruits than those not so treated. One of my pupils repeated the same experiment in 1854 and 1855 on pear-trees. He gave the first watering as soon as the fruits were fairly set, in the end of June. He repeated the moistening every fortnight, in the evening, in order to prevent evaporation, and that absorption might be completely effected during the night. The solution was at the rate of 26 grains to a quart for the first three, and 35 grains per quart for the two last waterings. He sent us, in the end of February from a tree thus treated, an Easter Beurré, so large that it could scarcely be recognized. He obtained like results in the following season.

But we doubt whether the results would not be still more successful if the fruits alone were moistened with the solution, for then they only would experience the stimulation of their absorptive powers, and would thus draw to themselves a much greater quantity of sap, inasmuch as the absorption by the leaves would be much less intense. Experiments should therefore be made with regard to this point.

9. *Ringing the Shoot or Branch immediately below the Flowers.*—Lancry exhibited to the Société d'Agriculture de Paris in 1776 a branch of a plum-tree which he had ringed. The fruits situated above the incision were much larger than those beneath it, and their ripening much farther advanced. Colonel Bouchotte, of Metz, thought of practicing this operation on vines, in order to accelerate their ripening. He ringed about 60 perches, and the grapes were larger and 15 days earlier. I have within the last twelve years repeated the experiment nearly every year on vines against walls, and always with like results. I have also tried it with the same success on the bearing shoots of the peach-tree. It is necessary to perform the operation when the flowers are opening; the longer it is delayed after this period, the less is the effect produced. The incision should penetrate to the wood, and the ring of bark removed should have a width equal to half the diameter of the shoot. The width, however, should not exceed one-fifth of an inch, otherwise the wound will not close up, and the success of the operation will be affected. For removing this ring of bark we have invented a small instrument, called a *coupe-sève*.

10. *Inserting on vigorous trees fruit-buds, with a portion of wood attached (Greffes en ecusson Girardin).*—This proceeding is only applicable to apples and pears. [Chiefly to these we should say; for it has succeeded even in the case of stone-fruit]. A tree which in consequence of excessive vigor has never produced blossom-buds, may by this means be made to produce fruit of large size from the abundant supply of sap which the inserted blossom buds will receive. But in order to derive the greatest benefit, it is necessary during the growing season to pinch the vigorous shoots of the tree, otherwise these shoots would absorb the largest portion of the sap to the injury of the fruit.

11. *Inarching vigorous shoots on the footstalks of young fruits on the same tree, or on the bearing shoots near to where the fruits are attached.*—Professor Thounin describes *Monographie des Greffes*, a similar operation under the name of *Grefre par approche* Leberriays. M. Luizet, of Equilly, who certainly did not know of that description, again discovered this kind of inarching, and practiced it with the view of increasing the size of fruits. This is how he operates: About the end of June he selects a vigorous shoot, which he inarches upon the peduncle of a fruit; then as soon as the union is effected and the shoot has grown sufficiently to draw the sap in large quantity towards the junction, he pinches the shoot in order to prevent it from absorbing too much sap to the injury of the fruit. When the stalk is too short, the shoot is inarched on the opposite side of the branch to that on which the fruit is situated. In both cases the shoot thus inarched acts as a nurse to the fruit, by drawing to its vicinity a large quantity of sap, and thus contributing to greatly increase its bulk. M. Luizet exhibited, in September last, at the Exhibition of the Paris Horticultural Society, Easter Beurré and Grosse Calebasse pears, and likewise Clingstone peaches, which had been treated according to this method; and they were much above the ordinary size of these varieties.



THE GARDEN

1891

THE HORTICULTURIST

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Why Is It: and Why It Is.



THE difference between the knowledge, and consequently the *enjoyment* of a true admirer of flowers, and the senseless being whose only pleasure consists in dusting a *prima donna* with them on the stage, is so great as to be almost unfathomable. The botanist, too, comes under the anathema of the gardener for his mode of admiration. We lately asked a distinguished author on botanical subjects, "Why it was that students of his science rarely had a good garden or a greenhouse." "Because," was the reply, "they can rarely afford it!" But this is not the only cause. *They* enjoy the flowers as nature placed her impress upon them; "double" and "improved" varieties are to them monsters. Sometimes, however, one meets with a scientific man who admires beauty in these

new developments; why should we not love *all* the beauties that nature can display, and why not with added interest when our own art has brought them into being?

To marry flowers to music is but an acknowledgment that beauties of two different kinds are allied; poetry, song, and music, united to Flora, appears to be a natural union. We do sometimes, however, wish that the flingers of bouquets could know *a little* of the structure of a flower, and appreciate the glory which they cast away. But on any terms we are willing that flowers should be *loved*. The lady who gathers a bouquet and arranges it in her house, has gone a step as far as her neighbor who passes four hours daily in acquiring a mechanical mastery over the keys of a piano without her heart being touched by *melody*. And the lover of the garden has a fairer chance that her enjoyment will be of a permanent nature, than the strummer of the harpsichord whose period of play so often closes with a housekeeper's duties. Is it not melancholy to reflect on the hours, the *years*, wasted in mechanical trifling over musical instruments, in those numerous cases where there is no real taste for music? View the former "musician," in her age. What is the *use* of all the conquest she has made over the keys; where is the useful information she might have acquired by the study of a science during those long hours devoted to learning and saying the nonentities of the music stores; where are the moral teachings she has missed? Where the books she might have read, and the world of information, of men and women, or the history of her own race, she might have acquired? Perhaps she unites herself to an officer whose duties call him to the tropics; visit her there, and she tells you *only* of the heat; or if near the sea, that her piano is spoiled by the damp—and she cannot sing "without an instrument." Curiously enough this is a common complaint; the human voice, the most delightful, the most heart-touching, is much neglected for the less agreeable arts of mechanical device. Had she been taught to love and understand nature, her enjoyment would be ceaseless; her curiosity would be constantly awakened. It was our good fortune once to meet a married

couple in a tropical latitude, *banished* as they called it ; their occupations were merely such as they conceived would pass the *time*, that "enemy of the ignorant, that bane of idleness." The gentleman was all kindness, the lady anxious to be civil ; the first had not yet "*taken the trouble*," as he expressed it, to get a cocoa-nut, and taste that noble product of nature, its milk ; the lady hated the smell of bananas, and did not allow them on the premises, which were furnished very simply as if for temporary occupancy ; she had not observed a single flower of the lavish bounty around her. She had, however, her piano : but it was "out of tune," and there was "nobody to put it in order !" So her life was a listless series of mere endurances. Had she sooner cultivated a love for nature, and added the love of a garden to her sole accomplishment, life and her temporary banishment would have been full of enjoyment. If her pencil had been used with judgment, she might have brought home portraits of hundreds of friends that would have afforded her a life-long source of charming reminiscences. We have seen her since her return ; she has her piano tuned, and rejoices, we believe very sincerely, that she has not now to fight the mosquitoes, her sole tender recollection of the beautiful coffee plantations, and the gardens of the fruit of the Hesperides ! Poor lady ! We dare to say that the purchase of a bouquet to throw on the stage for the newest favorite of the hour, and of the contents of which bouquet she knows only the Rose, gives to her untutored mind the *appearance* of a pleasure that exists only in name.

Why is it that so many grow up in *total* ignorance of the lavish bounties by which we are all surrounded ? Why does education stop at the music stool, and the polka ? It is because the world is but half educated ; because our schools are "taught" by half-informed people ; books are to be learned by rote—books made by people, themselves ignorant of much they write about. The best treatises are often unknown to the masses who issue from our schools ; interested parties have made and sold others ; the bookseller worms himself into the Board of Instruction, and he of course vends his own inferior article ; teachers are made to order, and of a very second-rate order some of them are. The world wags onward, the children's minds are unopened. Take any town in this great Union and see how many of its so-called "educated" inhabitants can converse with you on Astronomy or Botany, two sciences whose objects are always above and around them ; they know less of these, perhaps, than they do of the "Negro Melodists." Sorrowful is it to see any mind wrapped around with the blanket of self-satisfied ignorance ; but so is it, and so will it be, until education—not the mere "learning" of our school-books, is diffused by people trained to know something more than is now disseminated. Every new comer upon this delightful, this beautiful earth, *has to learn* ; the blank sheet of the mind, on which it is so easy to write good or evil, must be constantly burnished or it becomes rusty ; no burnishing will take place till curiosity is awakened. We regret to add that attempts to awaken it are too frequently the exception, not the rule or practice.

Inquiries are beginning to be instituted, to ascertain why the education that is to fit the young for useful occupations in country homes is utterly ignored. The question is one of immense importance, and we would have the subject fully canvassed.

TO KALON GRAPE.*

For a description of the To Kalon, we resort to Mr. Charles Downing's revised edition :

"Raised by Dr. Spofford, of Lansingburgh, N. Y. This fine grape has been but little disseminated in consequence of the general supposition that it was very much like, if not identical with, the Catawba, from which it is entirely distinct, in wood, foliage, and every characteristic of the fruit. It is a vigorous grower, foliage very large, abundant, and much less rough than Catawba or Isabella; and the alæ of the leaves overlap each other different from any other with which we are acquainted.

Bunches large and shouldered; berries varying in form from oval to oblate; very dark in color and profusely covered with bloom. Its fruit, when ripe, is very sweet, buttery, and luscious, without foxiness in its aroma, or any toughness or acidity in its pulp. It is perfectly hardy, and with good treatment in deep, rich, pervious soil, it is an early and abundant bearer; with indifferent treatment it is a poor bearer. It ripens a little earlier than the Isabella."

We are *almost* afraid to vouch for the coloring of this grape drawn from a specimen, if we remember rightly, that had undergone a journey of some length.

ON GARDENIA RADICANS AND FLORIDA.

BY A FLOWER GARDENER.

AMONG the most delicate and fragrant early flowers these Gardenias may be classed; for they are now forced forward in abundance to meet the demands of our markets and gardens, and cultivated to a great extent for cut flowers. Both the above species strike freely from cuttings placed in silver sand, under bell-glasses, if favored with a gentle bottom heat; their after-management is equally simple, if, after sufficient root is made, they are potted off and transferred to a common hotbed, plunged to the rim, and kept growing till they actually flower; the principal thing to bear in mind in their cultivation is, that they delight in moist peat, and in nothing so much as a common hotbed. A few pots in a cucumber frame will do well, inasmuch that they who grow for supplying Covent Garden find it the most profitable as well as the most effective; the heat afforded is just what the plants require, keeps off red spider, thrip, mealy bug, and other entomological pests, to which they are so liable in the stove. When the plants are large, they should be transferred to a moist stove or orchid-house, or they are in danger of receiving a check they do not get over without considerable care and trouble, and frequently not at all. If cuttings were taken off at the time when last year's shoots had made all their growth, they will root and flower before they are more than three inches high, and even in thumb-pots, although for specimens this would not be allowable. Few plants surpass them in delightful fragrance, and they yield an abundance of lovely blossoms at a time when they are very serviceable.—*London Florist.*

* See Frontispiece.

THE ORCHARD HOUSE, OR THE CULTIVATION OF FRUIT TREES IN POTS UNDER GLASS.

BY THOMAS RIVERS, OF THE NURSERIES, SAWBRIDGEWORTH, HERTS.

Continued from page 272.

Plums.—I do not think that the good qualities of this fruit are as yet half appreciated. It is in season from July to November; it is excellent for preserves and for compôtes. And then how delicious are many of its varieties as dessert fruit! For the orchard house it is also well adapted; the early varieties ripen very early; the late kinds may be kept in muslin bags all through November; they shrivel in the dry climate, and are perfectly delicious. I have had some of Coe's Golden Drop in muslin bags on the trees, partaking of the flavor of those called "French plums," but richer and more agreeable.

Plums for potting may be grafted on the sloe (*Prunus spinosa*), but they are equally prolific when grafted on the plum stock: if they have been removed the year previously to potting, they will be full of bloom-buds, and will bear a good crop the first season; if they can be procured already established in pots, the crop will be better and the fruit larger. The same compost and the same treatment recommended for apricots will do for plums; the same potting, pinching, and pruning, so as to make the trees nicely shaped, compact, and dwarf, is all that is necessary.

In selecting varieties some care is required, so as to have plums all through the summer and autumn. The very early and very late plums here in the South of England seem to ripen in the orchard house without any loss of flavor; but the mid-season plums, such as the Mamelonnée, Green Gage, De Montfort, and, I may add, the Jefferson, are, I think, improved in flavor by being ripened in the open air. For this purpose the trees should be lifted, so as to break off their young roots, a week previously, and then removed to some warm and sheltered situation. Their flavor is, I think, improved by this treatment; and their removal will give more room to the peaches and nectarines. In wet and moist climates, where the Green Gage ripens with difficulty, they must remain under glass all the summer.

And now to our selection. For the first, take the Early Favorite and Early Prolific,—two most excellent sorts, which ripen about the middle of July, nearly as soon as the Jaune Hâtive, a very early, but very inferior, plum; next in succession comes the Saint Etienne; then the De Montfort; the Denniston's Superb, and the Mamelonnée—early green-gage-like plums; the Green Gage; the Jefferson,—rich and delicious it is; Purple Gage; Reine Claude de Bavay; Coe's Golden Drop; Ickworth Impératrice; St. Martin's Quetsche; Coe's Late Red, and the Late Black Orleans;—all these are excellent, and ripen nearly in succession as I have placed them. A very nice way of keeping the autumn plums, or, indeed, those that ripen in summer, from wasps and flies, is to form the trees into compact bushes, which may be enclosed, when bearing fruit, in a muslin bag,—any common cheap muslin will do,—tying it tightly round the stem of the tree, so as to exclude the ants, which are great pests in dry and pleasant places. I have only to remark that the plum in orchard houses will to a certainty always give abundant crops, and as certainly ripen its fruit: in short, its culture will be sure to give satisfaction to those who love gardening.

After some years of experience, I have found the plum so easily grown

in pots, that I feel a new era in their cultivation has arrived. I propose that, for those who wish to grow a regular and certain crop of plums without incurring a heavy expense, rough-built lean-to orchard houses should be erected in some out-of-the-way corner of the premises, consisting of larch poles, rough half-inch boards, with two or three sliding shutters for ventilation,—in fact, merely a glass-roofed shed on purpose for protecting plum-trees in pots while in blossom and setting their fruit. It is surprising with what vigor and beauty plum-trees blossom even in the rudest glass structure, and as the trees need not remain in the house longer than the end of the first week in June,—for then all danger of severe spring frosts is over,—they may be placed so close together, that a house twenty feet by twelve, with a path in its centre, will hold ninety-six trees, forty-eight on each border. The trees may be planted in 13 or 15-inch pots, and treated exactly as other orchard-house trees; with this difference,—all the trees having young fruit should be removed from the house in June, and placed in rows or otherwise in the garden, to ripen their fruit in the open air.* The pots may be plunged in the soil one-third of their depth, but not more; for if the roots are too cold, the fruit will suffer in flavor, and if the soil be wet and cold, it should be drained or made porous, so that the water passes from the pots rapidly, and the top-dressing of manure must be most abundant. As a matter of course, the very late plums must be ripened under glass; but all those varieties that ripen in the open air before the end of September may be there grown to great perfection, and regular annual crops insured, if care is taken to thin the fruit properly. If too large a crop is extorted, the tree *will* have a year's rest. It is quite astonishing how prolific these bushes become in a few years; and by merely pinching off the ends of exuberant shoots—which should be done about the end of June—to within three or four inches of their bases, they soon form themselves into compact round-headed trees, quite as ornamental as orange-trees in pots and tubs, and far more gratifying as regards utility.

The best varieties for this extended mode of plum cultivation in pots, are the Early Prolific; De Montfort; Denniston's Superb; Green Gage; Angelina Burdett; Woolston Black Gage; Kirke's; Guthrie's Late Green; Reine Claude de Bavay; Purple Gage; and, above all, the Jefferson, one of the most beautiful and delicious of plums. These are for the dessert; but as in some climates it may be necessary to grow plums in the same way for culinary purposes, I may as well give the names of a few good kitchen plums: such are the Victoria and Autumn Compôte, both large and excellent, ripening in succession; the Diamond; the Early Orleans; White Magnum Bonum; and Prince Englebert. The trees must all be removed to the orchard house the last week in October, top-dressed and watered, and then kept dry all winter. As the earth of these out-of-doors orchard house trees becomes very firm by the heavy rains of summer, an iron pick, to take out the mould in spring, will be found very useful. I gave a sketch in p. 265 of one which I have had made by the village smith. As plums are coarse feeders, I take the surface earth out to the depth of six inches at the side of the pot, sloping upwards to the stem, so as to be able to give them a large quantity of fresh compost.

To those who wish to grow plums under glass in large quantities, I beg

* There might be danger in this practice in America, from the curculio, without the muslin bag.—ED. HORT.

to point out a very simple mode of culture,—viz., planting a house with bushes or pyramids, and removing them biennially to check their growth : one of our most skilful gardeners, Mr. Monroe, grows them in this manner, and finds that, after two or three years, owing to the trees being every season loaded with fruit, they do not require removal, as they grow very slowly.

Cherries.—The *Cerasus Mahaleb*, *Bois de Sainte Lucie*, or *Perfumed Cherry*, has been long employed on the Continent as a stock for dwarf cherries ; it will grow well in calcareous and shallow soils, unfavorable to the common cherry stocks. It is a very good stock for trees for potting ; when grafted or budded on it, they form beautiful dwarf bushes : the *May Duke* and *Morello cherries*, of which there are several varieties, do much better on it than the *Bigarreaus* and *Hearts*, which are apt to gum, and grow too rapidly in proportion to the stock. Cherries are well known to be difficult to force, or to grow under glass : the blossoms generally fall without setting their fruit ; but in our well-ventilated orchard houses, this is not the case.

Their potting, compost, and treatment may be exactly the same as that recommended for apricots : the tree should be formed into a nicely-shaped bush, with regular divergent branches ; on each branch the shoots, all but one leader, must be pinched back in June to a spur of about two inches, and the leading shoot shortened in August to about six inches, till the tree has attained the size desired ; the leader may then be shortened to one inch annually, and the size of the tree, if it becomes too bulky, reduced by the knife. The best early cherries for the orchard house are, the *May Duke*, the *Archduke*, the *Belle de Choisy*, and the *Royal Duke*,—which ripen in succession. Then of the *Heart Cherries* and *Bigarreaus*, the very earliest of all is the *Belle d'Orléans* ; then the *Early Purple Guigne* ; *Knight's Early Black* ; the *Black Eagle* ; *Elton* ; *Bigarreau Napoléon* ; the *Bigarreau* ; and the *Florence* : I have placed them as nearly as possible in the order of their ripening. Of late cherries of the *Morello* tribe, which succeed admirably as dwarf bushes, there are *Reine Hortense*, a large and delicious sweet cherry ; the *Late Duke*, also sweet, and of the highest excellence ; *Griotte de Chaux* ; *Coe's Late Carnation*, a most delicious late cherry ; *Belle Magnifique*, a very large *Morello*-like cherry, but not very acid ; and the *Morello*, which, when fully ripe, and black, in September, is not to be despised as a dessert fruit. All these may be made to supply the dessert through August, September, and, indeed, great part of October, by enclosing each bush in a muslin bag, tied tightly round the stem near the ground : the dry air preserves them from mould, and the warm climate gives them a flavor very superior to that of late cherries cultivated in any other mode. Cherries under glass are very liable to the attacks of the black aphid. There are two remedies for this pest : brushing the shoots, as hereinafter directed ; dipping them in strong tobacco water ; or covering the bush with a sheet of tiffany or calico, and placing ignited tobacco paper in a small flower-pot under it, so that the draught through the aperture at bottom is open. This a good method of fumigation.

In wooded districts it is almost impossible to taste cherries fully ripe, so numerous and destructive are birds : in such places cheap orchard houses might be built for their sole culture, in which the ventilators should be kept constantly open as soon as the fruit begins to color, but the openings must be covered with netting to keep out their winged enemies. They grow

remarkably well in pots, and in a few years become most fruitful, every spur giving a bunch of blossoms ; nothing can be imagined more cheerful than a cherry orchard house when the trees are in full bloom in April and May.

Figs.—The fig is not a general favorite ; but to those who like them, as I confess I do, their cultivation in the orchard house is interesting and most simple.

Figs may be planted in the compost already recommended, and in pots of the same size, top-dressed in spring, syringed in summer, and put to rest in autumn, and treated exactly as other fruits. Although fig-trees against walls require protection from the frost,—which would otherwise destroy the young fruit that is the first to ripen in early summer,—yet under glass, with the mould perfectly dry, and the shoots thoroughly ripened, they will be uninjured by the most severe cold. If a well-formed bush cannot be procured, the tree must be cut down the first season to within nine inches of its base ; the shoots, when they make their appearance, thinned out to five : when these are about a foot in length, pinch off the end from four, leaving the central shoot for a fortnight or so to grow longer ; then pinch off its end in the same manner. Your bush will be formed, but you must not expect any fruit the first season. In succeeding seasons it must be pruned in the same manner that you would a bearing tree purchased and placed at once in the house : *i. e.*, in May or the beginning of June, as soon as the young shoots have made five leaves, pinch out the terminal bud of each : they will then give fruit for a second crop, the first crop having been produced by the shoots of the preceding year. And to keep your trees as compact bushes, never allow any shoot to make more than five leaves without pinching out the terminal bud with the nails of the finger and thumb. The tree will, in a year or two, become too much crowded with young shoots ; thin them with a sharp knife, leaving no spurs, but cut close to the main branch or stem. Figs like more heat than any other fruit yet mentioned ; they may have the warmest corner of the house, not requiring much ventilation. A house with fire-heat is indeed necessary for them, if two crops in the season are wished for. In 1857 figs in common orchard houses ripened two crops of fruit in several instances. They must have abundance of water, or the fruit will all drop, when nearly full-grown, without ripening. The varieties best adapted for pot culture are, the Early Violet, the White Marseilles, and the Brown Turkey, or Lee's Perpetual : if more varieties are required, the Angelique and Black Ischia may be added.

To those who have not much orchard-house room, the following method of growing figs may be useful. In the summer of 1857 I happened to visit Altenburg, a small town, the capital of the Duchy, about twenty miles from Leipsic. In the kitchen garden of the castle I observed some fine half-standard fig-trees with very stout clear stems and round heads full of fruit, then (August) nearly full grown. Aware of the coldness of the climate, the thermometer often descending many degrees below zero in winter, so as to kill fig-trees in the open air, I inquired of the gardener how they were managed. He stated that every season, in October, they were taken up with their balls of earth and placed in a cellar, where they remained till the first week in May : they were then brought into the kitchen garden and planted in a row as I then saw them. He said they always ripened one abundant crop of fruit in September. I have reason to believe that stand-

ard figs treated in this way would also ripen one crop in the neighborhood of London, and in the Southern Counties.

Pears.—In the South of England, pears can be grown on pyramids with so much success, “barring” spring frosts, that there is no occasion to let them occupy room in the orchard house; still, in seasons like that of 1850, when, in even the most favored districts, all the blossoms were destroyed by spring frosts, I felt much gratification in having about a dozen trees in pots on quince stocks covered with fine fruit,—and more highly flavored Brown Beurrés I have never tasted. Their culture is very simple, for trees on quince stocks that have been root-pruned may be potted any time in the autumn, or even as late as February, and yet give a crop the first season after potting; as they set their fruit very thickly, they must be severely thinned the first season, and eight or ten pears ought to be the maximum of a crop. In two or three years a well-managed tree will be able to give from eighteen to two dozen finely-grown fruit. In the North this method of culture will be found both eligible and interesting; for glass without fire-heat will give just the climate suitable to the finer sorts of pears.

The pear-tree, when grafted on the quince, seems to be quite at home in a pot. I have some trees that have now been five years in 13-inch pots; they are in the most perfect health, and the stock seems to swell with the graft, showing that existing circumstances are favorable to its growth. I am inclined to attribute this healthy state of the stock, and consequently of the tree, to the roots of the quince enjoying, if I may so express it, the warm atmosphere which surrounds the pots during the whole summer; for my trees have been placed, unplunged, out of doors in the sun: in warm dry soils however, to economise water, it would be advisable to plunge the pots one-third of their depth in the soil. Pear-trees are gross feeders, and should have three or four surface-dressings of manure during the summer.

Pears deserve to be grown extensively in pots; and in climates liable to spring frosts, or in gardens having but little space for the finer kinds of pears on walls, a pear house may be built, as recommended for plums. The trees may be treated exactly in the same way, and abundant crops of fair-sized fruit obtained. Pears ripened under glass require attention as to the proper time of gathering them; they must not be suffered to hang too long on the trees; for in 1854, and again in 1855, in two or three instances, I had pears on my trees which were grown under glass all the season; these, although of fine size, and most beautiful in appearance, having clear skins of a fine golden color, without speck or blemish, never became soft; I was for some little time, I must confess, entirely at a loss to account for this curious fact, as all circumstances seemed so favorable to the ripening process; but I believe I have now discovered the cause. In the autumn of 1855 I allowed some Louise Bonne pears, some Passe Colmar, and a few other kinds, growing in the open air on trees well sheltered, so that no wind could displace them, to remain on the trees till the first week in November; they were remarkably beautiful, both in form and color, and the fine dry weather we had for so long a period seemed so favorable that I felt unwilling to gather them: these pears never ripened. I am, therefore, led to conclude that pears under glass should be gathered early, *i. e.*, as soon as they will part from their foot-stalks when lifted. From not being disturbed by the wind when under glass they will hang a long time, and one is loath to

rob the trees of their ornaments : they thus become hard and worthless from a species of over-indulgence.

From recent experience, I am induced to recommend that in the South of England pear-trees should always be removed from the orchard house in July, and suffered to ripen their fruit in the open air, in a sheltered yet sunny situation ; their flavor will then be piquant and racy, more so than that of fruit gathered from wall trees.

The trees should be formed into bushes, as recommended for apricots, plums, &c. ; the young shoots pinched in June, and the leading shoot of each divergent branch shortened in August to six inches ; so that the tree gradually, but slowly, increases in size, every part being furnished with blossom-buds. An abundant top-dressing of the strong compost recommended for apricots must be given in spring, even laid up above the rim of the pot ; and such gross feeders are they, that manure-water may be given to them every day in summer with advantage. The most prolific and eligible sorts for pot culture are, the Brown Beurré ; Easter Beurré ; Glou Morceau ; Bergamotte d'Espéren ; Gansel's Bergamot ; Doyenné Gris ; Beurré d'Aremberg ; Beurré de Rance ; Louise Bonne ; Marie Louise ; Passe Colmar ; Josephine de Malines ; Crassane ; Winter Nelis ; Beurré Clairgeau ; Prince Albert ; and Van Mons (Léon le Clerc). The above are all autumn and winter pears. If summer pears are desired, Doyonné d'Eté, Jargonelle, Citron des Carmes, and Colmar d'Ete, may be potted. In the North, where these early varieties do not ripen kindly in the open air, their culture under glass will give much satisfaction, for they may be brought to the dessert with their fruit in full maturity. I need not, I trust, say more about this really new and interesting mode of cultivating pears. My readers will, I hope, see its advantages, and many of them venture to put it in practice. I may, I trust, be allowed to add, that if I lived in an unfavorable pear climate, and wished for a certain supply of fine winter pears, I should fill a house with those two most delicious kinds, Josephine de Malines and Winter Nelis, which, unlike some sorts, ripen under glass with their full flavor.

Grapes.—For some few years it has been the fashion for gardeners in lordly places to grow grape-vines in pots, which, after bearing one crop of fruit, have been destroyed. Now these pots are generally of such large dimensions as to be quite out of character for our orchard houses, and totally unfit for the amateur who wishes to be master of "all he surveys." By observing in the land of the vine that grapes, and good grapes, could be grown on very small bushes, and in crevices containing but a scanty portion of earth, I was induced to try their culture in comparatively small pots, without destroying them after giving their first produce, continuing their culture without shifting, but top-dressing them annually, suffering their roots to feed in the border during the summer, and then root-pruning and managing them in the same way as other orchard-house trees. This has succeeded admirably, and my vine bushes have been beautiful objects, bearing from four to six bunches of nicely-ripened grapes.

To form these bushes but little care is requisite ; a vine one or two years from the eye, with a single stem, must be selected, and potted into an 11-inch pot, in the same compost as recommended for other fruit trees, adding to each pot a quart of 1-inch bones, well mixed with the mould ; then cut the vine down to within eight buds of its base : the three lower buds must go

for nought ; the five upper buds, if the wood be well ripened, will give each a bunch. The lower shoots should be stopped, their tops pinched off as soon as they are four inches long : the upper five shoots may be suffered to grow till the bunch is perceptible ; these may then be stopped one bud above the bunch, and all lateral shoots that afterwards come forth may be stopped at two buds from the base of the shoot they spring from. No other pruning will be required during the first season than this finger-and-thumb pruning. It is quite possible that some of the five buds may fail to give a bunch ; no matter, stop them of the same length as the fruit-bearing shoots, so as to make a uniform pretty bush ; for the vine in all sites and situations, and in all stages of its growth, is a beautiful object. You will now have an upright stem with five divergent branches or spurs. Now, on the pruning of these spurs depends success ; they will, of course, from being grown under glass, be well ripened, and the buds well developed. Begin at the stem, and count four or five buds upwards ; the fourth or fifth will, in all probability, be nice and plump. This must be your fruit-bud. Cut down to it closely ; then with a sharp pen-knife *cut out* two or three buds, leaving the terminal bud and another at the base of the spur close to the stem. This will give you a shoot, which is to be your fruit-bearing shoot for the following year. You will thus have on each spur two buds, one for fruit, and the other for wood.

In autumn, that part of the spur which has borne fruit must be cut down close to the shoot which is to bear fruit the following season, and this shoot must be pruned in the same manner to one fruit-bud and one shoot-bud. This pruning should be done early in October, as the buds are then fully developed, and much is gained by autumnal pruning. A vine treated thus will last for many years, and may be always kept as a dwarf bush : the main stem, in time, will swell, and not require the support of a stick.

The first season the cultivator must be content with four or five bunches from the vine ; but if it has its annual autumnal top-dressing of the compost described in p. 264, and in summer a weekly supply of manure-water, it will soon be able to bear eight or ten bunches, and become like one of those hardy prolific bushes one often sees growing in the crevices of rocks in the wine countries of Europe.

After their fruit is set, vines require syringing like other orchard-house trees. As soon as the fruit is gathered, prune off the roots which have fed them so bountifully all the summer, top-dress them, withhold water, and put them to rest for the winter. I may add, that vines do not need the extreme ventilation recommended for stone-fruits : a warm part of the orchard house will suit them best ; or if a small house with a brick Arnott stove can be entirely appropriated to them, so as to force them, and have two, or even three, crops in the season, their culture will be most interesting. To do this, if forcing be commenced in January, put in one-third of your plants, early in March another third, and then in May the remainder. I do not hesitate to say that a house appropriated to vines in pots will give more fruit than the same space of glass with vines trained to rafters in the usual manner.

The varieties best adapted for this bush culture are those that are very prolific, none are more so than the following :—the Early Malingre ; the Purple and Black Frontignans, most abundant bearers ; the Prolific Sweet Water ; the Purple Fontainebleau, also abundantly prolific ; the Esperione ;

the Grove End Sweet Water ; the Cambridge Botanic Garden, a variety of the Black Prince, and a great bearer ; the Chasselas Musquée ; the Muscat St. Laurent ; the Royal Muscadine ; the White Romain ; the Black Hamburg ; and the Chaptal, which gives large and most beautiful bunches. It must not be forgotten that the berries must all be thinned when they have attained the size of small peas, or they will become crowded and inferior.

Apples.—There are a few delicious American apples which require more sun and a drier climate than that of our “tight little island,” and these I feel convinced can be cultivated in the orchard house with success. They should be grafted on the Paradise stock, be planted in the same sized pots as other orchard-house trees, in the same compost, and have the same treatment with regard to summer pinching as apricots. The only sorts I know at present to be worthy of this in the South of England are some foreign varieties, among which are the American apples, the Newtown Pippin ; the Northern Spy, a delicious, large, handsome, and good-keeping apple, with half-melting flesh ; the Melon Apple, of equal goodness : these seem to require a warmer climate than the open air even of our Southern Counties. The Male Carle, a favorite Italian apple, may also be tried. In the far North, however, some of our fine English apples may be equally worthy of a place under glass : such as the Ribstone Pippin ; the Nonpareil ; the Golden Pippin ; the Golden Reinette ; the Van Mons Reinette ; Coe’s Golden Drop ; the Sturmer Pippin, and some others. I hope one day to see orchard houses on many a sunny slope in the Highlands ; and why not ? If art and wealth can overcome Nature in making fruits grow instead of heather, the conquest will cause smiles rather than tears, and give a much greater amount of happiness than the “glorious victories” of our history.

Mulberries.—In the North this delicious fruit does not ripen kindly ; in such localities dwarf plants in pots may be tried in the orchard house, and I doubt not but they will succeed well.

I may also add that White Currants, which are seldom well ripened, and even then are very acid, may be grown to great perfection in pots under glass.

Strawberries.—On the back border of the lean-to orchard house—for, unless the front is partially of glass, the front border is too much shaded—spaces will be found for strawberries in pots, and they give much pleasure and satisfaction ; their fruit will ripen about ten days before those from plants in the open air, and to a certainty will not be spoiled by rain or vermin. Whoever has tasted fruit of the “British Queen” grown under glass without being forced, will, I am sure, have a lively recollection of their being much higher flavored than those generally gathered from strawberry beds.

Nothing in our orchard-house culture is so simple as the management of potted strawberries, and nothing will be so certain of agreeable results. About the middle of July take 6-inch pots, place two or three large pieces of broken pots at the bottom, so as to lie hollow ; then mix your compost, which should be two-thirds loam—if rather stiff the better—and one-third rotten manure. You are so far prepared for operating ; but you still lack an implement, and what a strange one in the hands of a gardener ! for it is neither more nor less than a pestle,—a wooden pestle, fashioned out of any stout stake, and perfectly rounded at bottom : now then, take a handful of mould—nothing like the hand in potting—put it into your pot, and give it

a good pounding, and so keep on with a handful, and a pounding, till your pot is full, quite level with the brim, for the earth will afterwards sink enough to retain water. You will thus, if you have done well, make your earth level with the brim, and as hard as a barn floor. Take the pots to your strawberry beds,—and mind, there are but few strawberries known at present to be worth forcing or growing in pots in the orchard house,—Keen's Seedling and the Seedling Eliza for early sorts, and the British Queen and Carolina Superba* for a main crop, will suffice,—and place on the centre of each pot a runner which has commenced to make roots, or if no roots are apparent it will do as well, and on the runner place a small stone, to keep it from being blown off by the wind: make no hollow place: do nothing but place it on the hard surface, as I have directed. If the weather be dry, water daily; and if the runner, as is often the case, pushes forth another runner, pinch it off. In two or three weeks the roots will have penetrated to the bottom of the pot; the plant may remain attached to its parent till the middle of September, and then all the pots may be removed to their winter quarters,—some sunny place: they should be placed on rough cinders, and then plunged in sawdust or rotten tan. In February, they may be removed to the orchard house or forcing-house, as required; no shifting is requisite, and a plentiful crop will be the result.

Strawberry plants, treated in this manner, attain much strength and luxuriance in the autumn; their fruit-buds will be finely developed, and they will be all that the gardener can wish them to be. This very simple mode of treating strawberries for culture under glass is not new; it was pointed out to me by a market-gardener some years ago. I have practised it ever since, and am more than ever pleased with it. In growing strawberries in pots, it is the usual practice to place them on shelves close to the glass. In the orchard house at Hyde Hall, I have seen, annually, remarkably fine crops; the pots are placed among the peach-trees, on the back border, six feet from the glass.

The following extract from the "Gardener's Chronicle" of June 7, 1856, seems to give a very nice mode of cultivating strawberries in pots:—

"In the garden of the Horticultural Society, in the year 1855, Mr. Gordon caused runners to be taken up from the ordinary plants in the open borders in the first week in August, and potted in 2½-inch pots (small 60s); the soil used was a mixture of rotten cow-dung and loam (quarter dung, three-quarters loam). When potted, they were placed in a close frame until established, and when the roots had filled the little pots, which was in about four or five weeks, the plants were shifted in the same kind of soil as before, into 4-inch fruiting pots (48s). They were afterwards transferred to a fully exposed situation in the open air, where they remained until the first week in December, at which time they were removed to a border in an unheated orchard house, where they were kept rather dry during winter. On the 14th of March the pots were removed to the front shelf in a curvilinear vinery, kept at a temperature of 40° until the middle of April, when the temperature was raised to 55°. The plants were watered twice, when the fruit was fairly set, at an interval of three days, with a weak liquid manure, made with half-rotted cow-dung and water, allowed to stand a few days before using. The result was an abundant crop of excellent fruit."

* The experiments that have been tried with strawberries for orchard houses in America, have shown the following to be the most successful: McAvoy's Superior, Albany Seedling, Goliath, and Ohio Mammoth.—The largest have been Omar Pacha.—[ED. HORT.]

Almonds.—To those who wish to be reminded of the “sweet South,” by having almonds fresh and ripe from the tree, the orchard house will give one more tribute. Almond-trees in pots require exactly the same treatment as peaches and nectarines; but the choice of the proper sorts is of consequence. The Sweet Almond in common cultivation, and which is so conspicuous in our shrubberies in March, with its bright pink blossoms, is not the variety to be selected. The only sorts worthy of cultivation are the Tender-Shelled Almond—“*Amande à Coque Tendre*,” and the Large-Fruited Almond—“*Amande à Très Gros Fruits*,” the former has shells very tender and easily broken with the fingers; the latter gives large fruits with shells not quite so tender. They require, however, even more air than peaches, while in bloom, and if the weather be dry and sunny they should be placed in the open air by day, removing them to the house at night: if this is inconvenient, they should be placed near one of the ventilators, which should be open night and day.

THE FORCING ORCHARD HOUSE.

This kind of fruit house may be built in the same way as the common orchard house; but it is necessary to nail felt over the boards to prevent its being too airy in early spring, when forcing is commenced. It requires skill and attention; still, with only common care, a house heated by a brick Arnott stove placed in the centre, or by hot-water pipes, will not disappoint the careful amateur gardener, and will give strawberries in March, grapes in May, and peaches and nectarines in June.

I have a house thirty feet long, with a brick Arnott stove in the centre of the back border, which is excavated for it. Everything thrives admirably. My forced strawberries, placed on the front border near the glass, root into it, and give me abundance of excellent fruit. In like manner, peaches, grapes, figs, and apricots may be forced with but little trouble—in fact, with much pleasure and gratification. The three modes of heating are by a well-built flue, the brick Arnott stove, and hot-water pipes; the first and second are about equal as regards economy,—the latter the most expensive, but certainly more agreeable than any other. A flue may be employed for houses under fifty feet in length and twelve or fourteen feet wide, efficiently, but not, I think, for houses above that length. Any country bricklayer can build one: its dimensions inside should be nine inches deep, and six inches wide, formed by bricks on edge, covered with two layers of tiles: the furnace should be fixed low, so that there is an immediate ascent from the end of the furnace into the flue, and a gentle rise—three inches in twenty feet—should continue to the chimney, which may be less than the flue with advantage, according to some gardeners; it is not, however, of much import. In building these *forcing* orchard houses the *constant* ventilation through the cracks in the boards must be avoided; the boards must be rebated or be cased with asphalt felt; or, as bricks are cheap, the walls may be of brick, with the ventilating shutters in back and front. The forcing orchard house I have alluded to above is built with posts of larch cut once down and covered with half-inch boards; these being nailed on, were well tarred with Stockholm tar, and the felt (M’Neil’s) then nailed on, and done over twice or thrice with boiling coal-tar, in which lime that had been slaked a fortnight was mixed to the consistency of thick paint: this has formed a shining imperishable mineral coat. I know of nothing equal to it

for felt, clay, or lime walls or fences. My clay walls on some old buildings have, by repeatedly using it, become coated with a substance as hard as stone.

I have mentioned that bricks may be used ; but although I have many plant houses built with bricks, I have not employed them for building orchard houses, or even houses for forcing roses, &c. My preference for boards covered with felt for forcing houses may be owing to imagination ; but I may as well state *why* I have and do prefer them ;—it is because I have found them fiercely hot during the day, even in moderate sunshine, the evil effects of which are easily modified by abundant ventilation, and agreeably cool during the night, without that stifling atmosphere peculiar to houses with brick walls, only because bricks give out heat for many hours after sunset. Now, in thus rapidly cooling down, they certainly approximate to the descriptions given of the climate of the East, the birthplace of all our choice fruits ; and so my peaches, nectarines, grapes, and figs grow and do well in houses with their walls of half-inch boards and felt.

Forcing of peaches and nectarines in pots, unless the fruit is required to be ripe very early, *i. e.*, in April, or early in May, is not a difficult operation. The trees should be removed from the orchard house to the forcing house in December, and towards the end of the month have a good supply of water, so as to thoroughly moisten the earth ; if severe frost comes on, a fire should be lighted at night to keep the earth in the pots from being frozen. About the middle of January forcing may be commenced, the temperature by day kept up to 50° by fire-heat (if the sun shines it will mount up to 60° and 70° for a short time without injury to the trees), the night temperature may go down to 40°. The trees should be syringed twice a day with tepid water ; this will soon make the blossom-buds swell ; and when they are fully open, which will be in about twelve days, discontinue syringing, and, if the weather is mild and sunny, give air very freely in the day and a little by night, so that no stagnant moist air, so fatal to the blossoms of the peach, exists in the house ; if the weather is keen and frosty, air must still be admitted, and a brisker fire kept up, so that the temperature is not lower than 50° by day and 36° by night. Close worsted netting, or Haythorn's hexagon netting, placed over the ventilators, will allow of air being given night and day, even in frosty weather, without injury to the blossom. As soon as the fruit is set and commences to swell, syringing twice a day (with tepid water), as directed for peach culture in the orchard house, may commence ; a day temperature of 60° and a night of 40° to 45° should be kept up, and, when sunny, abundance of air may be given, for the thermometer will then rise to 80° and 90° ; instead of lowering the fire, which may lead to inconvenience, admit more air, to lower the temperature, for gleams of sunshine in our early spring months are not of long duration, and the temperature is completely at command by the ventilators. To sum up, give brisk fire-heat and abundance of air by day ; very little fire-heat, or none if the weather is warm, and a slight portion of air by night ; syringe twice a day—in the morning at 9, in the afternoon at 4—till the fruit commences to color, and peaches and nectarines will ripen kindly, early in June, and be of fine flavor.

Apricots, May Duke cherries, and plums, may also be forced ; and although in large establishments the two former often have houses especially allotted to them, as they require much care to fully succeed, yet a few trees placed

near the ventilators, for they require even more air than peaches and nectarines, may do very well with them. It is a good practice to thin out the clusters of blossoms on the May Duke cherries with sharp-pointed scissors before they open, taking out quite half from each cluster.

[To be concluded in our next.]

MYRICA CALIFORNICA.

RAISED from seeds collected by Hartweg in California ; received at the Garden June 5th, 1848, and said to be collected in woods near Monterey ; growing twelve feet high.

This was originally gathered by Menzies, on the north-west coast of



America. Douglas found it at Puget Sound. It forms an evergreen bush, with dense, narrow lanceolate, slightly serrated leaves, covered, especially on the under side, with transparent, glossy, saucer-shaped sunken scales, of microscopical dimensions, consisting of a layer of wedge-shaped cells, placed obliquely round a common centre. The flowers are green and inconspicuous, in short axillary spikes, which eventually bear from one to

three small globular fruits, whose surface is closely studded with fleshy, oblong, obtuse grains of a dull red color, and astringent flavor.

It is a hardy evergreen, growing freely in any good garden soil, increased by seeds or by layers, in the usual way. It flowers in July, and produces in September an abundance of its little granular fruits. In gardens it is an acquisition, being a hardy shrub, with fragrant leaves, and well suited for rockwork or for the front of a shrubbery.—*Horticultural Society's Journal*.

WHY HAVE WE NO TUTOR FARMERS?

BY CHARLES REESE, BALTIMORE, MD.

WHY have we no tutor farmers? No thoroughly practical and efficient instructors for our sons in the noble science of agriculture? We find as we pass along the highways of life, hundreds of lawyers and doctors, whose doors are ever open to students, and thousands of merchants eager to secure capable and honest clerks, but no farmers advertising for young men to become candidates for the high honors of their grand and elevating profession. Now why is this, and why is it that year after year we find hundreds of young men, sons of farmers, wending their ways to our large cities in search of employment, when there is such an extended field of usefulness at home? Why are our Theological Seminaries, our Law Schools, and our Medical Colleges crowded to repletion with eager aspirants for power and wealth, most of whom are the sons of farmers and planters?

These are grave questions, but we think they are not incapable of solution, as these things are all the legitimate effects of causes which are quite ascertainable.

In the first place, we have sadly perverted the heavenly principle of civil and religious liberty, and by our shameful abuse of this benediction of Providence, have almost made it a curse. The idea of *freedom in its largest sense*, has penetrated so thoroughly the delicate framework of society, that time-honored customs, and distinctions between virtue and vice, that have been hallowed by the approval of the wise and good in all ages, are daily upturned, and the time is fast approaching when the principle of obedience to parental authority, the very shield and bulwark of our national existence, will be trampled under foot.

Destroy these safeguards entirely, and the despotism of France would be far preferable to liberty at such a sacrifice. It is a moral impossibility for "Young America," in either town or country, now-a-days, to follow in the footsteps of his grey-haired sire. In his vocabulary the word "*Progress*" means to commence in everything where his father ends; consequently, if he decides to become a merchant, as soon as he comes into power, the counting-room in which for thirty years his father had transacted business, and had grown rich by saving money, suddenly becomes very dingy and dark, and must be enlarged; must have a lofty ceiling, with light admitted from above through purple and crimson glass; must have new desks and a fine Brussels carpet, &c., &c.; and the storefront, of elegant pressed brick, which for many years was the handsomest on the street, must give place to an elaborately wrought brown stone, or richly carved marble facing, of high cost. Or if he becomes a farmer, the idea of cutting wheat with a scythe and threshing it

with a flail for twenty years, as his father had done, until he becomes rich enough to purchase the latest improvements, is positively absurd. He must have at the outset, the very best "reaper, and mower, and raker," with, if possible, a binder and stacker combined, and the best "horse power" in the known world; and as not one farmer in fifty can afford to buy these for all his sons, away they go as soon as their coarse voice comes, and their beards begin to grow, to the large cities, where the chances of making a fortune are said to be greater, but where they are in reality, at the present time, incomparably less: and what is the consequence? The cause of agriculture loses a brave champion for want of a proper training when young; and Commerce, Physic, or the Bar, has to support an indifferent or altogether worthless member, whose ultimate failure is almost certain from the fact that his affections were not in his business,—his heart was amongst the birds and flowers of his native hills,—and who, in nine cases out of ten, after wasting fifteen or twenty of those ripe full years, "when life was in its morning prime,"—those strong, fruitful years that never return—will crawl back to the old homestead a broken-hearted and disappointed man, to eke out a miserable existence, perhaps to die, "unwept, unhonored and unsung."

This is not an overdrawn picture. It must be evident to every reflecting mind, that for half a century this evil has been annually growing worse and worse, and that unless the unerring hand of Divine Providence is mercifully outstretched to remove the forces which have so disturbed the beautiful relations of town and country, a long night of anarchy and confusion will close in around us, from which, for many generations, there will be no awaking.

In a truly healthy state of society, the relations of town and country are very similar to those of husband and wife, indissolubly connected for the common good; and, as it was once beautifully said of married partners, "*their independence was equal, their dependence mutual, their obligations reciprocal*," so it may be said of, them. As soon as these relations are disturbed, as soon as the equilibrium is destroyed, disorder creeps in, the devil sets up his throne, and in a very short time a jail and penitentiary are needed. That these relations are now disturbed, no one will deny who has observed the large number of idle vagabonds prowling about the streets of all large towns, and marked the fearful increase of crime which the police records indicate.

What then is the remedy proposed? What will restore the equilibrium, and check the gigantic strides of this insatiate monster, who is daily, hourly robbing the green hill-sides of Maryland, Virginia, Pennsylvania, and the Carolinas, of their fairest flowers, and crowding them into our heated cities to sicken and die? The plan is a simple one;—based upon the heaven-descended principle of reciprocity, it must commend itself to the earnest attention of all. There must be mutual action and reaction, equal rights and mutual benefits enjoyed and yielded by each. Away with all petty jealousies. Let the towns restore to the country what they have deprived her of,—her glory and strength, her young men, those to whom she must look for power, for wealth, and advancement. If they cannot do this, let them give their own sons. Let the sons of the merchants, who have grown rich by trading in the produce of the soil, become *the pupils of the farmer*. Let them be instructed in every branch of agricultural science. Let them be told, whilst at their mother's knee, of Cincinnatus, of Alfred the Great,

of Charlemagne, and the incomparable Washington; and when they are old enough, let them follow the plow, and learn to watch over the golden grain until it is safely housed from the wintry rain. Let them learn to cut off a pig's tail and slit his ears; to cure him of the staggers, as well as to bridle and mount the untamed Bucephalus; and when they graduate, give them good lands, and good tools to work with; and this above all,—let them feel that in their hands, under the direction of an ever-watchful Providence, are the destinies of the American Republic, and all will be well.

What will be the result? Ten thousand young men, with means to farm profitably, annually sent to the country, will richly compensate for ten thousand poor young men who come to town for employment, and ten hundred thousand acres of land, now lying waste, would annually be brought under cultivation, thereby increasing the productions of the country to an incalculable extent, and enhancing the value of every acre of land throughout the Union. Nor is this all; of the hundreds and thousands of merchants, and mechanics, and lawyers, who annually go to the country because it is fashionable, consequently necessary, as soon as their wealth reaches a certain point, and who, after spending a fortune in doing nothing but deep and lasting injury to the cause of agriculture, by downright ignorance of the first principles of farming, return to town, thoroughly disgusted with country life, after an experience of a few months, a large number would have competent and efficient managers in their own sons, and would not only have the pleasure of seeing the wealth they had labored to acquire *well and wisely* used in the accomplishment of great ends, the natural result of the union of mind and means, but would have the proud satisfaction of seeing their sons ascend, step by step, to high places in the estimation of their fellow-men.

In the earnest hope that abler minds will take hold of this subject, and give it the consideration it appears to deserve, this article is written. There are, without a doubt, in all our large cities, great numbers of wealthy men, who are willing, this day, to place their sons with *tutor farmers* if they had an opportunity. Some of the States are waking up to the importance of Agricultural Colleges, and a vast amount of good will be done in that way; but boys educated in masses cannot possibly be so well prepared as where only two or three are in the hands of a competent instructor; and besides, in the family circle of the farmer they would have the blessed home influence, so dear to every parent's heart.

Gentle reader, whoever thou art,—brother, countryman, neighbor or friend,—do not pass this suggestion by. Take it home with thee; talk of it by thy fire-side. Look at that rosy-cheeked, brown-haired boy by thy side. What is to be his future? His bright eyes look imploringly to thee for help. Speak to him gently and tenderly, and he will do for thee whatever thou wishest. Choose for him, and he will one day bless thee for thy goodness. Leave him to choose for himself, and perhaps he will curse thee for thy neglect.

Baltimore, March 29th, 1859.



ON HYBRIDIZING.

BY FOX MEADOW.

MR. EDITOR :—If we were asked by some person how the human mind could be improved,—how the human soul could be made radiant with joy,—how to gain a positive knowledge of, and be able to realize in a degree the great creative power of God, we should say, *study nature* ; and I plead ignorance of any branch better adapted for intellectual exercise than the pursuit of horticulture and floriculture.

There is in the cultivation of fruits and flowers a lovely attractiveness which the outside world little dreams of ; a charm for the most vacant mind ; a plane of thought for those whose mental capacity probes *far down* into cause and effect ; a field of study for those of most austere thought, and an *invitation* from beauty and loveliness in every phase that can yield pleasure and delight to the most fastidious, as well as the humble mind.

The heart that bears no affinity to those beauties of loveliness must be cold indeed. The warble of the blue-bird, and the song of the robin never drops in sweet cadence on his soul, and the man must walk in comparative darkness to all that belongs to higher life.

Perhaps one of the greatest pleasures derived from this pursuit is the art of HYBRIDIZING—raising new and improved varieties of fruits and flowers ; for however beautiful flowers are in a state of nature, they are doubly so when they come from the hands of the skilful hybridizer.

In doing this he is only taking advantage of the known laws that govern the vegetable reproduction ; he is assisting nature, and to this means we owe, in a great measure, our many improved fruits and flowers of the present day. The field of experiment is almost as boundless as is that of nature itself. The hand of the artist is fast changing the character and quality of our fruits as well as flowers. You see him standing in his garden admiring some beautiful flower ; but, alas ! it is too delicate for our changeable climate ; it comes from some country perhaps where frost never congealed its flowing sap or blighted its opening beauties ; still he admires and covets it ; he has some of the same family in his garden, hardy fellows, that brave every blast, but they want the color, form and substance of the exotic. Our amateur is one who has studied the structure and functions of plants, and the laws by which those functions are governed in their operations. He thinks he can transfer the beautiful inflorescence of the exotic to its hardy relation in his garden, *and he does so* ; art and perseverance triumph over all ; his skill and forethought are crowned with abundant success.

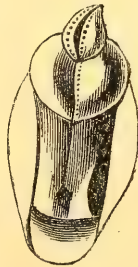
In thousands of instances has the transfer of inflorescence taken place, to the gratification and delight of every admirer of nature's most lovely productions.

Again, you see him perhaps mourning over his pet Isabella ; mourns because the cruel frost has withered its beautiful fruit some few days before it was ripe ; *hybridizing* flashes across his mind ; 'a variety a little earlier, worked on my Isabella ? Yes ; the hybrids most likely will be just what I require' ;—but then he recollects that some great botanist says it can't be done ; but our amateur does his own thinking, and he feels determined to

have this difficulty obviated. He watches the opening flowers on his vine momentarily, and determines the period when stamen, and anther with its fecundating dust, must be removed, and with the pollen of his favorite sort impregnates the stigma artificially, and it becomes the male parent of the young progeny.

What is the result? Just that which he expected: the hardy, productive constitution of the female combined with the early ripening of the other. He is satisfied, gratified, and amply rewarded, but it has not been gained without toil, care, observation, and perseverance; some years were spent in hybridizing by following the rules of others, producing some good, others good-for-nothing seedlings, and the remark was often made in reference to them—'*They sport—run out; how singular it is that seedlings will so degenerate.*' This is exactly like that old so-and-so that I had here some three or four years ago, and here is a white seedling from a red or purple one. How is it that *you* get just what *you* want? 'Stop, friend; did you ever *think yourself* about this—did you ever *think* that there are no effects without their cause? Well, there must be some cause for all this jumble. Now try this plan, and mark it well—never impregnate a plant that has ever before been impregnated by a different male variety; because if you do, you may expect some of the seedlings to bear the identity of male parentage of years gone by.' However strange this doctrine may appear, it is a truth. It appears that, under some peculiar influences, the female organization becomes in a measure daguerreotyped with the first impress of the opposite sex, and the chances are as favorable to that of retrogression as they are of progression. So well is this fact understood among the animal stock-breeding physiologists of England, that it is to this fact almost alone they owe their great success in the constant production of their fine breeds; and I would earnestly call the attention of all who are interested in the production of the superior quality of fruits and flowers, to give this matter their calm consideration, as they will find in the end that it will be a saving of much anxiety, trouble, and expense.

We could better substantiate the truth of this statement by entering more largely into the subject of animal physiology, but as that subject does not come exactly within the limits of the *Horticulturist*, the above must suffice.



BROWN SCALE.

ABOUT THE THORN-APPLE.

BY J. STAUFFER, LANCASTER, PA.

THIS rank and luxuriant weed, known as "*Jamestown Weed*," or as it is improperly called, "*Jimson Weed*," and vulgarly, "*Stinking Tom*," presents many interesting features. The German name "*Stechapfel*" is analogous to the common English name at the head of this article. Its scientific generic name, *Datura*, is a corruption from the Arabic *Tatorah*. Its botanic name is *Datura Stramonium*. Whence its specific name of *Stramonium* is derived I am unable to say, unless it comes from the word "*stramen*"—straw, litter, or the like, from the fact that it is so common among rubbish in neglected spots of rich soil.

This plant is seldom found remote from cultivated grounds; it is so common around dwellings, along road sides, and borders of fields, that all will readily know the plant by the rude wood cut of a flower and leaf of the

DATURA STRAMONIUM.

There are two varieties, those having white flowers on green stalks being the most common, and those having a purple stripe in the flower, and also purple stems, with minute green speckles or spots, considered a distinct species by older writers, and called the *D. tatula*.

Its native country is not positively known. In Miller's Dictionary by Martyn, the editor in common with other authors refers it to North America.

Nuttall considers it as having originated in South America or Asia. The seeds retain their vitality for some time, and, lodged in the earth used as ballast, are thus carried from one country to the other, and hence it is found in all commercial regions.

Gerard in his Herbal for 1597, figured the plant, and gave the first satisfactory account of it. He introduced it into England from seeds received by him from Constantinople. He says: "The juice of Thorn-Apples, boiled with hog's grease to the form of an unguent or salve, cureth all inflammations whatsoever, all manner of burnings or scaldings, and that in a

very short time, as myself have found by my daily practice, to my great



credit and profit." Reader, stick a pin here, if this is news to you ; I can vouch for its great curative power, as a salve, by simply collecting the leaves when the plant is in flower and frying them crisp in lard, expressing and setting by to cool.

Wagoners and plowmen often use the green leaf to apply to galled spots on horses, and, by removing the cause of the gall, cure the sore while working the animal.

Every part of the plant in its green state has a strong, heavy, disagreeable odor, and a bitter, nauseous taste ; taken internally it acts like other narcotic poisons, producing more or less cerebral disturbance, vertigo, perversion of vision, delirium and mania. It is therefore dangerous to tamper with internally ; the seeds are the most powerful. Even the long plaited bells of the flowers have tempted children to pluck them and suck them as they would "honey-suckle," and produced alarming effects, of which several cases have come to the writer's personal knowledge. The remedies in such cases are, a prompt emetic, followed by a free use of vegetable acids (lemon juice or vinegar) and strong coffee.

In the hands of a judicious physician it is found a valuable medicine, and was first introduced into regular practice by Baron Störck of Vienna, in the cure of mania, epilepsy, etc. Others have found it an efficacious palliative in asthma, and some other affections of the lungs, prepared and smoked as ordinary tobacco.

Many stories have been related of the power of this plant to produce mental alienation without at the same time materially affecting the body, one of which is recorded in Beverly's History of Virginia, p. 121, and reads as follows :

"The *Jamestown Weed* (which resembles the thorny apples of Peru, and I take it to be the plant so called) is supposed to be one of the greatest coolers in the world. This being an early plant, was gathered very young for a boiled salad by some of the soldiers sent thither to quell the rebellion of Bacon, and some of them ate plentifully of it, the effect of which was a very pleasant comedy, for they turned natural fools upon it for several days. One would blow up a feather in the air, another would dart straws at it with much fury ; another, stark naked, was sitting up in a corner like a monkey, grinning and making mows at them ; a fourth would fondly kiss and paw his companions, and sneer in their faces with a countenance more antic than any in a Dutch droll."

"In this frantic condition they were confined, lest, in their folly, they should destroy themselves. A thousand simple tricks they played, and after eleven days returned to themselves again, not remembering anything that had passed."

The above may readily be credited, yet there are exaggerated accounts of its marvelous powers, which in the days of credulity even the Royal Society of London were simple enough to believe—since they gravely inquired of Sir Philberto Vernatti "Whether the Indians can so prepare the stupifying herb *Datura* that they make it lie several days, months, or years, according as they will have it, in a man's body ; and at the end kill him without missing half an hour's time ?"

In the language of flowers, this is taken as emblematic of *Deceitful Charms*, and very appropriately. The bells of the Thorn-Apple droop during the heat of the day, and languish like some of our enervated city *belles* ; on

the approach of twilight, however, they revive, coquette-like, to display their plaited corollas of ivory hue, giving out an odor which, with their *deceitful charms*, entices the giddy insects that rove abroad at this season to sip its intoxicating nectar even to stupefaction. Thus it is helplessly imprisoned, until it drops to the ground, and restored again by that sun which causes the flower to droop, if indeed it be not past remedy.

The *Datura*, improved by cultivation, is now classed by botanists as *Brugmansia*, of which the *Knightii* is a beautiful garden ornament, as well as the Double White.

ON THE CULTIVATION OF SEA KALE—CRAMBE MARITIME.

BY FOX MEADOW.



HAVE often thought what a valuable acquisition this hardy perennial would form to our early vegetables in the spring, coming in perhaps a little later than asparagus, yielding its bounteous supplies for five or six weeks, when vegetables are generally scarce, equal in almost every respect to the much esteemed asparagus.

How little do we know of it here; yet our markets should be as plentifully supplied with sea-kale as any other vegetable. Perhaps it is not generally known; let some one of our market gardeners introduce it, and we have no doubt but he will be amply remunerated for his trouble. What was rhubarb seven years ago? Mere *dock leaves*. What is it now? *vastly different*, when for the few bunches of *dock leaves* sold for a few shillings, tons of excellent grown rhubarb has taken its place, and the dollars in the place of the shillings. Hence, we see that it only requires an introduction, and then the good properties of good articles always command a ready sale.

How to produce this delicious vegetable for the *million* seems to be the question, and profitably to the producer. First—The plant luxuriates in a light, rich, sandy loam; thousands of acres of such land on Long Island, Jersey, and almost everywhere, is just the soil to produce it to perfection. We would suggest the following mode of cultivation. Take, for instance, an acre of ground, thoroughly ploughed and harrowed down, mark out drills with a one-horse plough, six feet apart, and two inches deep, sow seed thinly, and when up, hoe the young plants out to twelve inches apart, keep clean with the cultivator through the summer. In the fall, when the frosts have destroyed the foliage, plough two deep back furrows over the crowns of the plants; this will protect them through the winter. The next season repeat the same operation, and the plants will be strong enough for cutting the following spring. Let it be understood that the plants require two seasons growth before commencing cutting.

Now, as sea-kale requires to be *blanched* to bring out its good properties (when *green* it is bitter and worthless), we do it as follows: In the fall, say November, ridge up the plants eighteen inches or two feet high (similar to moulding celery); in the spring rake off ten or twelve inches, and let the remainder stand undisturbed till you perceive the *crowned heads* pushing through and heaving up the soil; then you can cut away as fast as you

please. Cut it off square where it bursted from the root—if you cut *too low*, you cut off the undeveloped eyes or buds that should produce the succession, and at the same time mutilate the plant.

By this process, two desirable objects are effected at the same time,—namely, protection through winter, which also blanches the kale in the spring. The third year we should top-dress with any kind of manure that is most convenient—sea-weed makes an excellent manure for this plant.

The crop of kale being all cut for the season, the ridges should be levelled down, the ground top-dressed with manure, closing it up round the crowns of the plants with a little sand, into which they emit new roots freely. In a short time the whole surface of soil will be covered by the large foliage of the kale, rendering the cultivator useless; a solitary weed may be seen here and there, but being of no great importance, can be drawn by hand. We have seen beautiful kale grown in this way, and when the soil had been well manured, it resembled the heads of medium size cauliflowers more than any thing we know of. This delicious vegetable, when served up similar to asparagus, is second to none, but before it can be appreciated it must take its stand at the table. It forms also an excellent ingredient in soups—oftentimes saves the reputation of our valuable cooks, for they cannot well destroy it by over boiling, and when it comes under the charge of the *Gardener* it is so easily forced that he can send it to the table for six months.

We would also remind the cultivator of sea-kale, that during its natural growth through the summer, should it throw up its white blossoms for seed, they must be nipped off at once with the finger and thumb as soon as possible; this operation increases the number of *crowns* to the plant, strengthens the constitution, and increases the radical.

The plant belongs to the class and order “*Tetradynamia Liliquosa*,” and natural order “*Cruciferae*.”

SEEDS OF TIMBER TREES.

“I shall be glad if you would tell me the method how and when to pull, preserve, sow, &c., the seed of the following forest trees:—*Fraxinus excelsior*, *Aser psuedo-platanus*, *Æsculus hippocastanum*, *Alnus cordifolia*, *Crateagus oxyacantha*, *Fagus sylvatica*, *Larix Europæa*, *Picea amabilis*, *Pinus Austriaca*, *Ulmus campestris*.”—J. O. G.

[Forest-tree seeds are gathered when they are ripe. Such as ripen late in the autumn should be well but slowly dried, and put away in bags till spring. The Fir tribe, such as the Larch, the Silver Fir, Cedar of Lebanon, &c., should be gathered about November or December, as the weather will permit. They should be laid in a warm room where brisk fires are kept. The heat will cause the scales to open, and let the seeds drop out. In obstinate cases it may be necessary to drive an iron peg down the centre of the cone, forcing it open to get out the seed. The Cedar of Lebanon has cones so hard and close, that it requires considerable force to get at the seed.

The seeds of *Fraxinus excelsior*, or common Ash, may be gathered as soon as the leaves fall off the trees, dried, and kept till spring, or they may be allowed to hang on till February, and then gathered and sown directly. The Mountain Ash bears, as is well known, red berries. They con-

tain the seeds amongst the pulp. Gather them when ripe, crush the berries, and wash the pulp away in water, draining it through a sieve fine enough to retain the seed. Spread it on paper to dry, and then put it in paper, and keep it in a dry room. Sow in prepared ground in April. *Acer pseudo-platanus*, the common Sycamore, ripens its seeds in July. They should be gathered then, and moderately dried, and kept in as cool and dry a room as possible; if warm and moist the seed will sprout and spoil. Sow in March. *Æsculus hippocastanum*, the common Horse Chestnut, ripens its nuts in October. They are enclosed in a prickly shell, which bursts naturally, and the nuts may be gathered easily. *Crataegus Oxyacantha*, the Cockspur Thorn, ripens its seed in November and December. It should be treated the same as the common Thorn; that is, the berries or haws should be gathered about October, laid in a heap, and covered with soil for a year; then taken out of the soil and sown in either beds or rows (the latter is preferable,) and they will come up the year following. *Fagus sylvatica*, the common Beech, ripens its nuts in the autumn, and should be gathered as soon as they are ripe, or the squirrels and mice will destroy the best nuts, or conceal them for winter food. They should be gathered on a dry day, and placed in a dry room secure from vermin, till the sowing season arrives. That season is April, for if sowed sooner the late frosts will kill the young trees. The ground should be dug deep, and be well drained if necessary. It should be in good heart; that is, the year before it should have been under a crop of Potatoes, Turnips, Celery, or any other crop that requires well manuring. Then draw drills a foot apart, and one inch and a half deep. Sow rather thickly, for some may not grow.

Larix Europæa is the common Larch. I have already described how the seed should be gathered, cleaned, and preserved. To raise the plants it is needful to prepare the ground with great care. It should be ridged up in the autumn to receive the benefit of frosts, and be levelled down in the spring, chopping it very fine as the operation goes on; then towards the end of April, during dry weather, set out the beds three feet and a half wide, with two feet alleys between. Draw with a rake one inch of the soil into the walk, taking half the bed to one side and the other half to the other side; then sow the seed evenly over the bed, and cover it exactly half an inch deep; then level the surface with the back of the rake, and the operation is finished. Nursery laborers are very proud of their skill in this part of their business, and certainly some of them are very expert. The beds look so neat and tidy, that it is really a pleasure to view them.

Picea amabilis (the charming Silver Fir). I fear there is little hope for years to come of this fine species bearing mature seed. Whenever it does it should be managed exactly in the same way as the common Larch.

Pinus Austriaca requires also the same treatment.

Ulmus campestris (the English Elm). This tree ripens its seeds in June, giving the cultivator time to sow them and get the plants up the same season. The ripening of the seed is easily known by its falling from the trees. It may then either be swept up, or the gatherers may with ladders pluck the seed off the branches. The ground, should, of course, be ready to receive it, and then the seed should be sown immediately.

Alnus cordifolia does not ripen its seed till late in the year; hence it requires to be gathered, cleaned, and kept till the following spring. As the seed is very small, it should be covered very lightly.

One point must be carefully attended to in raising such forest trees as have small seed. In dry weather it is absolutely necessary to water freely and regularly, for if the seed once sprouts and the soil is dry, the infant plant will perish.

I hope I have answered our correspondent fully and satisfactorily, and I trust such information will be acceptable and useful to many of our readers. I shall, at some future time, give similar directions on raising many shrubs from seed.—T. APPLEBY, in *Cottage Gardener*.]

ON SELF-RENOVATION IN TIMBER TREES.

THERE is a Walnut-tree here, the history of which is curious and instructive ; and as it tends, in some degree, to confirm what I have lately stated concerning bark and wood, I beg to say a word or two on the former state and present appearance of the tree. It faces the eastern front of the stables, and is about thirty paces distant from them. More than eighty years ago, my father ordered it for execution, as he foresaw that ere long it would interfere with a favorite Scotch Fir. A gun-maker, who was standing by at the time, offered a price for the bole if it would be allowed to remain upright until it suited his convenience to send a conveyance for its removal. Whereupon, there and then, as the lawyers say, the tree was decapitated just nine feet from the ground. But the gunsmith never returned to take the tree, not having paid for it.

During the following spring, the still standing bole sent out a single solitary bud, just at the place where the upper part of the tree had been separated from it by the woodman's axe and saw. As no signs of further vegetation appeared, the bole was pronounced to have died, saving the part where it had germinated, and this living remnant of the former tree was somewhere about nine inches in breadth at the top, gradually widening to two feet as it approached the ground. From this alone the new bud received life and support, to make another tree in times to come. It went prosperously on from year to year, producing vigorous shoots and branches till the year 1810, when, on my return from the West Indies, I took it under my particular care, seeing that it required considerable attention.

Having ordered an adze, suitable in size and shape to the work which it had to perform, I began at the top of the bole, just opposite to the new vegetation ; and having cut out large pieces of the dead wood, I rounded off what remained, so that the new wood and bark might have an uninterrupted progress over it. Whenever I returned from abroad (which was about once in four years) I went, adze in hand, to the Walnut-tree, and cut out more of the useless and projecting former wood. The luxuriance of the new tree, rising from one single original bud, was truly astonishing. Its parts at the top of the bole closed in and united ; and in course of time they became so perfect, that no traces remained to show that a former head had ever been taken off. In the meantime, renovation from above to below proceeded steadily, every year producing a fresh supply of wood and bark. When at home I was perpetually hewing out little pieces of the ancient tree.

For many years a duck, every season, had her nest on the ground inside of the bole. But now the closing parts of the new tree prohibit her access.

In ten or twelve years more, the present deficiency will be entirely filled up by the renovating aid of Nature ; and when this shall have taken place the tree will measure eight feet in circumference at one foot from the ground. It regularly produces and ripens an abundant crop of nuts when the season is favorable. The whole of the new bark is easily distinguished by its comparatively smooth texture, whilst the original portion, which kept alive and nourished the new bud, is very rough and scaly, bearing evident marks of extreme old age. This year I intend to place a stone in the remaining cavity, with the year of our Lord 1859 cut on it.

The day will come when this stone, and all insects which have taken up their quarters in the bole, will be hermetically sealed, as it were, by the union of the new wood and bark. They will remain imprisoned in their holes, and there they must die, as they can never make their way back again to daylight ; nor will ever any daring Scolytus attempt a passage through the new and healthy wood in order to reach the old, which still remains in the centre of the tree ; and which old wood will remain there untasted by insects and undisturbed, until some hurricane or mandate of a future proprietor shall lay this tree level with the ground on which it now stands in renovated youth and beauty.—*Charles Waterton, Walton Hall.*

JASMINUM NUDIFLORUM.

THIS out-door, winter-blooming plant makes a sensation wherever it is introduced. No garden should be without it. It was introduced from Nankin, only so late as 1844 through Mr. Fortune. It is a shrub with angular deep green trailing branches. Its leaves are shining deep green, and each consists of three sessile leaflets of an ovate form, which fall off early in the autumn, and are succeeded by large yellow scentless flowers, which grow singly from the buds formed in the axils of the leaves which have previously dropped. It was considered at the time of its introduction that it would be an excellent addition to the greenhouse, by reason of its being a free winter bloomer, and continuing in flower for a length of time : and so it has proved, for plants growing in pots, and trained either with long stems and pendent branches, or in pyramidal form, have for years been objects of attraction in many gardens—nor is its beauty less conspicuous when allowed a more extensive range in the conservatory, with its roots growing in the free soil. It is, however, as an open-air plant that we would direct attention to its merits. On the face of a bleak hill, whether as growing in the common garden soil, trained on a trellis in front of the mansion, or in that part of a colonnade with a considerable roof protection, or rambling at will, the effect produced has been of the most charming and beautiful kind ; the flowers, too, have been most useful in bouquets and in the adornment of epergnes, vases, &c. ; the large bright yellow flowers contrast admirably with Camellias, Hyacinths, Primulas, and such like, and to these they add a peculiar grace when the stems and flowers are allowed to protrude outwards. The time is not distant, when not only every garden, but the sunny side of every cottage, will be enlivened and beautified, during the dull months of winter, with the golden flowers of this charming plant. S.

PINUS STROBUS PENDULA.

THIS variety was taken out of a bed where the seed had been planted seven years ago; it has the character of a weeping *Pinus Strobus*, and was raised by Mr. Heimbürg, Vice-President of the Horticultural Society in Mainz, who is entitled to the thanks of all lovers of weeping trees, for having increased their number by such a graceful specimen.

How frequently are such discoveries lost or unnoticed by careless observers, which for centuries may not be again produced. We are therefore indebted to Mr. Heimbürg for having brought this rarity to notice, and for introducing it to our collections.—*Deutsches Magazin, Stuttgart.*

AN HOUR IN THE VINEYARD.

BY JUDGE JOHN S. REID, CONNERSVILLE, INDIANA.

SPRING has come, with its birds and blossoms. The wild flowers and the peach-bloom are scenting the air with their perfume; and the song of the blue-bird is heard in the grove: the long winter is past, and the work of the Vine-dresser has already begun.

Owning a small vineyard on the west bank of the "White Water," containing about 2000 vines, chiefly Catawba, a variety of the *Vitis labrusca*, or common Fox Grape,—and having some knowledge and experience of the mode of cultivating this luscious fruit, as well as of the process of making the Wine, I have made free to send for publication my present remarks, on the mode and manner of cultivating the Vine in this part of Indiana.

Having become satisfied that the German mode of pruning or cutting down the old canes, to one single cane and spur, was not suitable to the nature and habits of our native varieties; for the purpose of testing whether long or short pruning, and fall or spring was the best time to prune the vine, last fall I pruned about one half of the vineyard to two canes or bows, leaving two spurs for next season's wood, whilst the other half I left until this spring, when it was pruned in the same manner; and I have now finished the operation including the pruning, staking, bowing and tying, and the vines are ready for the development of the young buds, many of which are considerably swelled, and putting forth their young leaflets to the Sun.

The vines were planted about four feet apart each way; are eight years old, having fruited four times within this term of time; and as yet, I have perceived no difference between those pruned in the fall and spring, both being equally healthy. I intend allowing them to grow freely, without cutting back the top, so that they may form a crown or coronal to cover the bloom and fruit from the rain and sun. Last season the excessive rain of early summer washed off and destroyed more than half the blossoms, and when the hot sun came out on the remainder, they became mildewed and dropped from the vine.

In the months of February and March, we prune, stake and tie,—in April we prepare the vineyard for hoeing,—in May the young buds have burst, and the young leaves with the tender blossoms are all out, and liable to the frosts of May. June comes, and the young leaves have gathered strength



PINUS STROBUS PENDULA.

and size, the fruit is forming on the vine, but the mildew is then considered dangerous, and the *rot* in July is lying back ready to destroy the last hope of the Vintage.

Being an "Amateur," to a great extent, I have been gathering around me many of the choicest varieties of the Fox species, and have planted in a favorable situation the Slips and Rootlets sent me by my friends, in order to test their qualities, as well as the productiveness of each when they mature their fruit; and now I have about fifty different varieties, running from the *Vitis labrusca*, or common Fox, to the *Vitis Vinifera*, or Wine Grape of Europe. I have also several seedlings of the Catawba, as well as some vines from seeds sent from Germany, that may fruit this year.

Some two years ago, I trenched and excavated a piece of ground, throwing out the cold yellow clay, and placing at the bottom old bones, filling up with a compost of stable manure, loam and sand, into which I planted the young vines; the result of which is now strong branching canes, running from 20 to 40 feet in length.

The Grey Fox, of which I have several varieties, is esteemed a most excellent grape, and worthy of special attention. A few of these are reported to me by those who have fruited them, as being little inferior to the Sweet Water, or Royal Muscatine.

My Diana, Rebecca, Concord and Herbemont, have done well this past season, and in another year I expect to have the pleasure (*Deo volente*) of sending you a box of choice bunches, to feast your viniferous friends.

Excuse this hasty scroll, and expect to hear from me again, when the blight of June, and rot of July have passed away, when I may report my further *experience*, and chat another hour in the Vineyard.

SALVIA PATENS.

THIS beautiful blue sage is seldom seen in flower gardens, for what reason we do not know. It grows freely and blooms abundantly, even in our hot summers, provided it has a deep rich soil to grow in.

The roots are somewhat similar to the roots of the Dahlia, and require to be treated in a similar manner,—lifted in the fall and preserved in a cool cellar, protected from frost. *Salvia Patens Alba* is a beautiful white flower; a bed of the above and the Scarlet Sage—*Salvia Splendens*—planted in circles of each color, forms an object in the flower garden of great interest and attraction.

WEEPING ASH.

THE Weeping Ash has frequently a tendency to assume an irregular growth, partaking more of the upright than pendulous form. To preserve an entire drooping habit, cut down all upright growths, and never allow any to grow in future. The simplest method of effecting this is to cut out all the buds that form on the upper surface of the branches, preserving those only that point downwards. By attention to this for a few years, the labor of a few minutes each winter, a drooping habit will be secured. S.

FACTS IN GRAPE CULTURE.

BY JOHN B. EATON, BUFFALO, N. Y.

I DISCOVERED, with some surprise, Mr. Editor, upon opening your May number, that a remark of mine in a former communication under the above title has greatly disturbed the equanimity of Mr. Chorlton. Judging from the asperity with which he criticises me, he considers himself aggrieved in no small degree.

"Without any disrespect towards the above-named gentleman," I may be allowed to say, that the acidity of his remarks seems to me quite unnecessary, and entirely uncalled for by anything in my article, which was written without the slightest intention of giving him offence, or of disparaging his treatise.

With his principles and practice in general, I am by no means at variance, and require none of the "testimony" which he offers to adduce, to convince me of their excellence and general applicability; as regards this particular locality, however, where the temperature occasionally falls as low as ten to twenty degrees below zero, I saw no impropriety in dissenting from Mr. Chorlton's dictum upon the point in question, innocently enough supposing that an amateur might be permitted to express his views and opinions, even if they *did* chance to conflict with those of such an unimpeachable authority.

I see nothing in my communication to which Mr. Chorlton should take exceptions, unless he desires and expects that his directions should be considered infallible, and equally suited to every climate. I do not understand that he claims this—in fact, he admits that they may require "slight modification." Now, a "modification" of his rules respecting ventilation, is precisely what I have practiced, and found to succeed well.

As Mr. Chorlton "would like to know how" I arrived at the conclusion that he "ever advocated a short allowance of air until late in the season," I will refer him to his treatise. At page 49, he says: "Do not give any bottom air at any time, until the fruit shows for color;" and at page 65: "As the grapes continue to color, admit more air in clear days; open the lower ventilators a little at first, gradually increasing till a free current of fresh air is obtained."

I consider these passages sufficiently explicit. If I *am* under "a slight mistake," as is intimated, in understanding them to mean that Mr. Chorlton allows *top ventilation only*, until his fruit is partially colored, then it must be confessed that their real meaning is most admirably disguised.

Respecting "the details of practice," which Mr. Chorlton requests me to furnish, you would probably say, Mr. Editor, that your space would not permit the insertion of a diary of my vinery, had I kept one, which I have not. I am not sufficiently interested in the "relative vigor" of my own and my neighbors' vines, to institute a critical comparison on that point, nor do I purpose exploring my friends' borders, in order to ascertain whether their roots "are or are not in a healthy state;" I will, however, state in brief, that my vinery is a curvilinear lean-to house, 13 by 35 feet in area, fronting a little east of south. The front sashes, six in number, all open out, and there are two large ventilators in the back wall, near the top, equal in their aggregate length to nearly two-thirds that of the house. It has no protec-

tion from the south-west winds—generally our coldest and most violent ones—except several apple-trees standing at some distance.

I find it more difficult to keep the temperature sufficiently low “at the beginning of the season” than later, when the foliage has shaded the house. For instance—to-day, (May 4th,) at noon, the thermometer indicated 92° with four of the lower ventilators, both the upper ones, and the door, all open. Can Mr. Chorlton venture to guess where the mercury would have stood had the upper ventilators only, been open? (It is of course understood that I am speaking of bright, warm days. In cool, and cloudy weather, when “under currents of cold air,” which annoy Mr. Chorlton so much, would be prejudicial, it is obvious that less ventilation is required.)

After a careful perusal of Mr. Chorlton’s article and my own, I do not see that he has disproved my statements, or given me any reason to change my views. I stated a fact which had come to my knowledge—that “some of my neighbors” had had their wood winter-killed, while mine was not—(I scarcely think that my “assertion” will be denied by the gentlemen alluded to). Their vines were protected, of course—so were mine ;—I have observed their wood just coloring, while mine was in an advanced stage of ripeness—my house had received free ventilation from the bottom, and theirs, as I understood, very little. Hence my conclusions.

Mr. Chorlton seems to imply that I have advanced several points, which he will find, by referring to my article, to have been gratuitously assumed by himself, as emanating from me. I have not denied that his work is one of great excellence, nor, that by following its instructions, canes of “ $1\frac{1}{2}$ to $1\frac{3}{4}$ inch in diameter have been perfectly ripened” in other places. Nor that “the vitis vinifera is so constituted as to require a long, steady, and warm temperature to produce maturity,” notwithstanding “all Mr. Eaton or any other cultivator may say to the contrary.” (If Mr. C. will inform me *when* or *where* I ever said “anything to the contrary” of that proposition, he will greatly oblige me.)

I have never claimed that I had “made my vines more than usually hardy, without reference to any man’s advice or method,” or asserted that my neighbors’ were “below my excellence.” I admit having had the vanity to speak of having produced some fine Muscats, but did *not* mention that I was assured by cultivators who came to see them, that they were the best specimens which had been produced here ; my own opinion was that there were others equally good.

Mr. Chorlton has evidently worked himself into an unamiable frame of mind. If he has been in this unpleasant state since the appearance of my article in February last, I can only offer my regret at having been the unintentional cause of it ; and I hope that after he has more calmly considered the subject, he will have the candor to admit that he has been somewhat hasty in his criticism.



EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

THE disasters to the farmer and gardener of the past month have been most distressing. A terrible gale in Iowa and Illinois has done much damage to life and property, and confirms fears respecting that region that we hope may have no foundation. The middle States were visited on the night of the 4th of June by a heavy frost, such as has been of rare occurrence. Injury was done to wheat in some instances, and gardens have suffered severely. In Rochester, Mr. Barry informs us, he picked up a piece of ice a foot long and as thick as a dollar. In Ohio much injury was sustained. Vessels arriving soon afterwards reported seeing numerous icebergs. These discouraging and somewhat exaggerated circumstances, and a huge export of specie, made an impression on the public mind almost amounting to melancholy, but the material prosperity of the country is excellent, and we see no cause for continued discouragement.

STRAWBERRIES have been abundant and cheap the present season, and our friends have sent specimens in bountiful numbers. Mr. John Saul, of Washington, shows what may be done in that climate by forwarding very superior Vicomtesse Hericart de Thury, to which we must say *magnificent*, and Comte de Flandre, equally large and most delicious. The latter is a hardy variety, passing the hardest winters of Washington without injury, and establishing its reputation in every point requisite, the burning suns of summer doing no injury to the foliage. As a cropper it has proved excellent, giving fruit of good size, clear, bright color, very solid, and of exquisite flavor. It will become one of the most popular of strawberries.

Kitley's Goliath succeeds better near Washington than any other large strawberry of its class; it is very hardy, not inclined to burn in summer, has invariably good crops; its great size and fine flavor should recommend it in an especial manner. Ground for this variety should be trenched, very much enriched, and the plants at least three feet apart each way. Well does it repay good culture.

Trollope's Victoria, grown by Mr. Cammack, of Washington, has been fine this season, but we do not think it equal to those named above, which have been grown profitably for market, and are especially valuable to amateurs also.

Mr. David Miller, Jr., near Carlisle, Penn., and Mr. Samuel Miller, of Lebanon, have kindly furnished a great variety for inspection. Mr. Joseph Lennig, of Germantown, Pa., has a variety much resembling the Bicton Pine, which has apparently originated among some Albany Seedlings, but smaller than the Bicton. From these specimens and our own, we shall have the pleasure of presenting our readers with figured plates in due season.

An amateur friend on the North River, who knows what he is about, says, "I am just now fully occupied tasting strawberries, which so far run as annexed:

"Leopold, very large and fine: Hooker, ditto; Vicomtesse Hericart de Thury, medium size, very high flavor; Marquis de la Tour de Malesbury, large and good; Cuthill's Prince of Wales, large and fine; Victoria, superb size and flavor; Fillbasket, large—not very high flavored; Seedling Eliza, large and pretty good; Ajax, grand; Athlete, large and very superior;" this we can bring by our own experience.

A SUGGESTION TO BUILDERS.—Cleanliness and freedom from insect annoyance will be produced by building kitchen walls solely of bricks, and painting their surface. No washboard is needed, and thus a sweet, clean, and handsome kitchen is produced, at less cost, too, than by employing plaster and "roughing off." We have seen an excellent specimen, giving great satisfaction both to the cook and her employer.

WEeping HOLLY.—The English *Cottage Gardener* speaks of a true Weeping Holly, which "weeps" just as much as the Weeping Ash—sweeping the ground with wreaths of coral—and adds, that no plant known surpasses it. Have we it in America?

GRAPE BORDERS.—Persons about to make new borders, should take into consideration their durability above all things, and provide against excessively wet periods that do so much damage. It is very easy to make borders which shall produce astonishing grapes, whilst the materials are not too much decayed; but they soon decline when a general decomposition of matter takes place.

Now, there is nothing in loam that changes materially, but the mere grass and its roots; but these are so divided amongst the mass, that, although it be decaying organic matter, there is no bulk of humus, or black residue, in one portion. It is doubtless the introducing inordinate quantities of organic matter, whether animal or vegetable, that ultimately produces that condition in the borders which old gardeners call "putted"—a condition in which air cannot enter, nor water pass. What remains under such conditions, but for the originally pampered roots—once like sponges—to go gradually to destruction? How different are surface dressings, the timely application of liquid manure, &c.

"**HORTUS LINDENIANUS** for April, 1859, Part I, (Brussels, Huyez), is a new periodical in 8vo, illustrated with colored figures, entirely consecrated to the publication of the numerous fine novelties introduced to cultivation by the collectors of M. Linden, of Brussels, the Veitch of Belgium. Each plate is accompanied by horticultural information and botanical characters; the former by Mr. Linden himself, the latter by (we presume) Prof. Planchon, than whom few are more capable of such a task. Since none but handsome garden plants will be introduced, this will undoubtedly prove a work extremely acceptable to all lovers of fine new flowers. Let us add that the plates, which are extremely well executed, are also useful studies for young artists. The first number contains *Arachnothrix rosea*, *Begonia amabilis*, *argentea*, and *Victoria*, *Beloperone violacea*, *Centradenia grandifolia*, *Cuphea ocyroides*, and *Lindenia rivalis*."

FLORE DES SERRES, Nos. 25 and 26, contain, in addition to much good miscellaneous matter, original figures of nine new varieties of *Achimenes*, *Nolana paradoxa violacea*, *Camellia Bonomiana*, more of the huge Heddewigian Indian Pinks, the very handsome hardy *Azalea van Houttei* fl. pl., the two superb Double Peaches sent out by Mr. Glendinning under the names of *camelliæflora* and *dianthiflora*, and three *Azaleas indica*, each white with red streaks, viz., *Gloire de Belgique*, *Le Géant*, and *Etendard de Flandre*.

CULTURE OF ACHIMENES.—Now that we have so many beautiful summer-flowering exotics for the decoration of conservatories and greenhouses, there is no excuse for turning these structures into lumber rooms during summer; for, although it is a season when flowers are abundant in the open air, there are many fine exotics that are too delicate to flourish unless protected. Of these the *Achimenes* are conspicuous, and afford sufficient variety in themselves to satisfy the most fastidious in floriculture. They are well adapted for those who wish to make the most of a greenhouse, growing rapidly in summer, requiring no care, and taking up no valu-

able space during winter. They are also easily propagated, and were it necessary so to increase them, almost every scale of the tuberous roots will make a plant. The tubers, however, increase sufficiently for ordinary purposes, and if allowed to remain entire produce stronger plants. The routine treatment they require is very simple; where the convenience of a hothouse can be secured they may be had to bloom in June, but they will succeed well, although somewhat late in blooming, even if brought forward in a frame, or in the greenhouse. Very fine plants are produced by placing single tubers in small pots, growing them in a warm house, and shifting into larger pots as they require, stopping or pinching the branches, and thus inducing a spreading, stocky plant; but an equally successful mode is to deposit six or eight of the tubers in a pot, allowing them to grow into a large cluster. This method is especially adapted for such sorts as *Longiflora*, *Longiflora alba*, *Coccinea*, *Rosea*, and those of similar growth. Stronger growing kinds, of which *Grandiflora* and *Pedunculata* may be taken as examples, should not be planted so thickly; three plants in an eight-inch pot will be sufficient for these, and by stopping the points a very large mass may be obtained, although the stopping of the points will render them later in flowering.

The soil for them should be of a light and porous nature. The fibrous portions of rotted sod, mixed with leaf-mould and sand, will be very suitable; charcoal dust is a good material for mixing with the soil if destitute of fibre; as they require liberal watering at certain seasons, a free transmitting soil and thorough drainage must be provided.

In their young state they should not be kept very wet, but as they come into flower, plenty of water will be necessary, and a shaded, moist atmosphere will be conducive to their rapid growth; shading from sun will extend their flowering very materially.

When the flowers fade and the foliage shows symptoms of maturity, let the watering be gradually abridged; the tubers will ripen more perfectly if the plants are placed out in the open air under a glass cover, however, to protect from rains, and they will keep well by laying the pots on their sides under the staging in the greenhouse. This simple treatment ensures me a great display of flowers, and keeps the greenhouse a "thing of beauty" all the summer.

AMATEUR, N. Y.

MUSIC AND NATURE.—Some of our lady readers may possibly think from the opening pages of this number that we there preach a crusade against all music. We do not wish to be so understood, for in its place none esteem it more highly. It is when it usurps the study of nature, and becomes a sole accomplishment that we condemn. And on this topic of education the annexed truths will be appropriately quoted:

"The whole force of education, until very lately, has been directed in every possible way to the destruction of the love of nature. The only knowledge that is considered necessary among us is that of words, and, next after it, of the abstract sciences; while every liking shown by children for simple natural history has been either violently checked, (if it took an inconvenient form for the housemaids,) or else scrupulously limited to hours of play: so that it has really been impossible for any child earnestly to study the works of God but against its conscience; and the love of nature has become inherently the characteristic of truants and idlers. While also the art of drawing, which is of more real importance to the human race than that of writing (because people can hardly draw anything without being of some use both to themselves and others, and can hardly write anything without wasting their own time and that of others),—this art of drawing, I say, which on plain and stern system should be taught to every child, just as writing is,—has been so neglected and abused, that there is not one man in a thousand, even of its professed teaching, who knows its first principles," &c.

The effect of ignoring nature in education is happily expressed by the same author in another place:

"The main mischief of it is, that it leaves the greater number of men without the natural food which God intended for their intellects. For one man that is fitted for the study of words,

fifty are fitted for the study of things, and were intended to have a perpetual, simple, and religious delight in watching the processes, or admiring the creatures of the natural universe. Deprived of this source of pleasure, nothing is left to them but ambition or dissipation; and the vices of the upper classes of Europe are, I believe, chiefly to be attributed to this single cause."

THE EVERLASTING PEA (*Lathyrus latifolius*), is a climbing plant of much usefulness in covering up unsightly objects, or as a screen; when in full flower it is a charming plant. It dies down in the fall similar to the hop vine, but the roots are quite hardy, and for covering an arbor it makes a good variety. We have seen a pretty effect produced on arbors where the roof is covered with grape-vines, by pruning the latter so as to confine the foliage to the top, and decorating the sides with a variety of summer climbing plants, as the so-called Australian ivy,—a beautiful foliage,—*Cobea scandens*, Passion Flowers, *Lophospermums*, *Maurandias*, *Solanum jasminoides*, *Clematis*, *Ipomeas*, &c. A variety of foliage and flowers can thus be obtained without detracting from the density of shade which the grape-vine ensures.

CATALOGUES, &c., RECEIVED.—Minnie Hermon; a Tale of the Times. By Thurlow W. Brown. A Temperance tale. C. M. Saxton, New York.

Farm Drainage. By Henry F. French. New York: A. O. Moore. The book on the subject—able, correct, and philosophical.

Wall Street to Cashmere. By John B. Ireland. New York: S. A. Rollo & Co. A very large and well illustrated octavo; not yet perused.

Hints to Horse-keepers. By the late Henry William Herbert (Frank Forrester). New York: A. O. Moore & Co. The illustrations are excellent, and we think we recognize the pencil of the publisher in some of them. This work will be a standard, and should be found in the hands of all lovers of the horse, or of the manly and womanly exercise of riding.

Descriptive Catalogue for 1858-9 of Fruit and Ornamental Trees, Shrubs, Vines, &c., for sale by James Edgerton, Sugar Grove Nurseries, Barnesville, Ohio.

Ceremonies attending the dedication of Vale Cemetery, Schenectady, with the By-Laws, &c., of the Association. This is a highly interesting pamphlet. The Rev. Julius H. Seelye made an oration of great beauty and interest. These cemeteries are public teachers, if properly cared for, in matters of neatness and in planting. Trees placed in them have a chance of permanency, and the selection of them is of great importance. The best, the most beautiful, the fragrant, and those of historical interest, must not be overlooked. Without care, cemeteries had better not be established.

ANSWERS TO CORRESPONDENTS.

JAMES TRUITT asks some questions to which we reply:—

1st. By "Wich Willow," J. T. probably means *Willow Twig* apple, a full description of which he will find on page 204 of Downing's Fruits and Fruit Trees of America, Revised Ed.

2d. "Waldeaur." We never heard of the fruit. It is not mentioned in Downing: we have not found a nurseryman who ever heard of it.

3d. "Empress" plum he purchased from an agent of "Frost & Co." There is no such plum that we have seen mentioned in Frost & Co.'s catalogue; nor in Hooker & Co.'s; nor in Ellwanger & Barry's; nor in Downing's Fruits.

4th. "Ambrosia" Apricot and "Early French" Apricot J. T. says he purchased from an agent of Moulson's Nurseries: he had better inquire of Moulson as to the "origin, quality and time of ripening," for although named in his catalogue, he gives no description, and even the names are not mentioned in the catalogues of our other best nurserymen; nor in Downing; nor in Thomas' Fruit Culture.

There are always some persons who are wanting to buy some sort of tree or vine that nobody else possesses or ever heard of. Such persons will always find plenty of self-styled tree agents

who are willing to gratify the whim, and to sell to them the most singularly named trees and plants. We are sure that the nurserymen, whom these agents *say* are their employers, do not know of any such sales, and they would not countenance any such imposition.

The reputation of the trade suffers very much by the swindles of self-constituted tree-agents; and the more reliable the nurserymen, the more apt these fellows are to pretend to be their agents. Messrs. Ellwanger & Barry, Messrs. Frost & Co., and other leading firms are compelled to use the greatest precautions to guard the public from imposition. A fellow in St. Lawrence county, N. Y., this spring sold large quantities of grape-vines by pretending to be the agent of Bissell & Salter of Rochester, and using their grape catalogue. The fact was that he never bought a single vine from them, and they never sent him or any other agent to St. Lawrence or any other county. Now are these gentlemen to blame if those who have bought that itinerant's vines find that they have been swindled? We repeat it: buyers cannot be too careful that their purchases come from reliable nurserymen and through reliable hands.

There is not a more honorable or useful occupation than that of disseminating throughout the whole country the valuable plants and fruits which have originated in any one section, and it is none the less a noble trade because *rouges* *pretend* to be regularly employed when they are only damaging *good* nurserymen and swindling the public.

EDITOR OF THE HORTICULTURIST—DEAR SIR:—Having between four and five acres of lawn which I am desirous to keep in the best order at the least expense, I beg to solicit your opinion of the merits of the lawn-mowers which I frequently see alluded to. My lawn is tolerably smooth, but the grass is thin. It has been seeded down for three years, but does not thicken or cover the ground to meet my expectations. The great trouble with me has been to get it cut just when it required it, as I am satisfied that allowing the grass to grow long before being cut is very injurious to the roots. Now I wish to learn whether or not these mowers will act upon an undulating surface? can they be used to advantage near trees and shrubs? in short, would it be advisable for me to procure one for the quantity of ground to be cut?
C. E.

Ans.—We would advise you by all means to procure a lawn-mowing machine. When their worth is once properly known they will revolutionize our lawns. We are convinced that by their use we may vastly improve, while lessening the expense of keeping a thick, close lawn. The machine will operate although the grading may not be of the smoothest, so that there are no sudden depressions or small inequalities of surface; but the more level the ground the more perfectly will it operate. One great advantage it possesses, and one that we think important, especially on lawns recently laid down, is, that it will cut smooth and level without the lawn being actually "closely shaven." The grass can thus be cut so as to present the appearance of close cutting, at the same time it is sufficiently long to shade the ground, and hide any bare spots. With ordinary care they can be used quite close up to trees and shrubs, but a scythe will be requisite to clean up small angles and around shrubbery, where it is too closely planted for the mower to operate with advantage. They are simple in construction and not liable to be easily broken or put out of order.

F. W. C. asks, "Is our present rather artificial mode of propagating the apple the best?" In England the seedling stock is grafted at about five feet from the ground, and the tree is five years old before sold; price half a crown (about 60 cts.) apiece.

Our nurserymen have adopted the present mode instead of the English practice, because 1st, The trees are ready for sale in 4 years instead of 5; because 2d, The farmers are not willing to pay a remunerating price for the older trees: they will have cheap trees, and nurserymen conform the supply to the demand; and 3d, The difference in growth and durability was not enough to be very immediately perceptible, and people readily persuaded themselves that there was no difference at all.

In our present mode there is a great difference in the manner in which scions of the several

varieties unite with roots, some of them even forming a *callus* at the lower part of the scion, whence spring forth roots in abundance; consequently, good nurserymen are attentive as to which varieties receive especial care in the grafting, and which need so little as almost to take care of themselves. The roots in all cases should be those of seedling stocks; but as to cutting a straight, healthy, vigorous root into two pieces or not, there cannot be any difference, because the moment a perfect junction is effected between the root and scion the root is a part of the scion as it ever was of the seedling.

The prejudice against root-grafted trees in the west began when the demand (above referred to) compelled nurserymen to graft their scions upon any pieces of old roots which they could obtain. Such roots were neither healthy nor vigorous, the junction was not perfect, the new root fibres not numerous, and the trees were short-lived. As that celebrated fruit-grower, J. J. Thomas, says, "opinions are changing in this matter," and we think that it is because our reliable nurserymen are cautious never to use any but healthy seedling roots in grafting.

If F. W. C. wishes a reform in this matter,—so far as he is concerned, let him buy apple trees grown in the English style. To be sure, he cannot get them at the price which farmers insist upon paying for their trees; but if farmers will have cheap trees the nurserymen will supply the demand. It is one of the laws of trade that sooner or later the supply will be pretty exactly commensurate to the demand.

Gossip.

BOTTLED LIGHT.—Nièpce St. Victor, pursuing his researches, finds that light will retain its action for six months; that is, you may seal up sunshine in a tube in July, and in December take a photograph therewith; but only one, for a single impression exhausts it. Again, if garden mould be taken from a depth beneath the surface, and carried into a dark room, no photographic result is produced; but if it be mould from the surface, on which the sun has been shining, then the sensitive paper becomes darkened. Here we see a striking instance of the energy of light; still active though shut out from the sun; and while science and art may find rich promise therein, we think that facts will be elicited exhibiting yet more clearly than at present the important function of light upon health.

LOCUSTS.—The Swiss naturalists are earnestly discussing the subject of the swarms of locusts which ravaged the valley of the Rhone in the Lower Valais last summer; swarms so numerous that they were hours passing a given spot, and hid the sun as a cloud. The inhabitants of the district are in dread lest the coming spring should hatch the eggs which now fill the ground all over many leagues; and systematic operations to dig them out, and to watch for and destroy the larvæ, are recommended as the only means of preventing a worse visitation next summer. In one of the locust seasons which sometimes afflict the south of France, the authorities of Marseilles paid 20,000 francs to destroyers of the pest, at the rate of twopence half-penny a pound for eggs and locusts.

THE KIDDEAN SYSTEM OF PROPAGATION is placing cuttings in a vial half full of water and half with sand, so as to keep the cuttings upright, for rooting Oleanders, and such like. If you fill anything with water, and as much sand as will keep up the cuttings, and give them 70° of heat, they will all root, and astonish you with the ease with which they will do it in so short a time, and with hardly any trouble.

THE petty annoyance or dishonest practice, whichever you choose to call it, of driving cattle into a neighboring proprietor's field, is far from being an uncommon one. A remedy which has

never been known to fail, is here put on record. If the trespassing animals be cows, wait till afternoon: then have them well milked, and send them home. If horses, let them instantly be put in carts, and sent off ten miles to fetch lime. A sudden strength will thenceforward invest your fences; and from having been so open that no efforts on the part of your neighbors could keep their cattle from straying into your fields, you will find them all at once impervious.

—*Fraser's Magazine.*

HUNGARIAN GRASS.—The *Boston Cultivator* says of the Hungarian grass: "Hon. A. B. Dickinson writes to the *Country Gentleman*, that the Hungarian grass of *last* year, and the Honey-blade grass of *this* year, 'is nothing more than what *millet* was forty years ago.' That's so. Thus fade our visions."

THE MOUNTAIN SEEDLING GOOSEBERRY.—Mr. Wm. Bacon, of Richmond, Mass., communicates the following to the *Wisconsin Farmer*: "This is a variety, brought into notice within a few years past, by Philemon Stewart, of the United Society, at New Lebanon, N. Y., and for the time it has been out it has met with a liberal distribution.

"Its qualities are, that the bush is a rampant grower, (we have seen sprouts three and a half feet long, the growth of a summer), a monstrous bearer, perfectly hardy, and the large fruit never mildews. In quality the fruit is surpassed by some of the best English varieties. It is a very desirable article for the garden."

WORTHY OF ENCOURAGEMENT.—A somewhat novel yet benevolent project, for the amelioration of the condition of poor orphan girls, is now under consideration. It is proposed by Mrs. T. W. Phelps, of Irving Place, who has generously donated an extensive and suitable plot of ground near New York for the purpose—to establish a horticultural school, where young girls may learn such light and healthful branches of industry as are embraced in the growing and canning of all the finer fruits and vegetables, the care of hothouses, the breeding of birds, the rearing of fowls, etc. Prosperity attend the attempt to teach young ladies something useful!

SODA ASH is considered one of the most valuable agents, when dissolved and diluted, that can be used in the nourishment of plants. Four pounds and a half of ashes, with three pints of quicklime, placed in three gallons of hot water, stirred occasionally, and allowed to remain for three or four days, will make, when diluted with rain water, 192 gallons of manure, that may be applied with the greatest confidence to kitchen-garden crops, and soft-wooded flowering plants in the pleasure garden. It is suitable for light, sandy soils, and its effects are steady, certain, and lasting; but in using it for vegetables it will be advisable not to apply it to seed, nor until the seedling plants have expanded their second leaf. Then it may be given to them in the evening, after the sun is hid behind the hills, or when he is overcast, and the day is likely to continue so throughout, or when rain is falling from the clouds; then the watering-pot may be taken, and the ground drenched with the liquid, so as to be likely to reach every fibre. This I practise two, and, in some cases, three times a week. It is, perhaps, one of the most suitable liquids that can be given to cauliflower, endive, and celery plants, as it does not, like those of a more stimulating nature, induce prematurely the elongation of the flower-stem; at the same time it leads the plants to the full development of their character, except in cases where the seed has not been of the right kind.

An experiment which was tried on the 12th of last July, upon the green fly, which had literally covered the plants of endive that formed a row across one of the beds in the kitchen garden, should be related. The plants were in a healthy condition but a few days previous to the fly being discovered upon them, but on the day mentioned above they looked sickly and dirty. Destruction to the whole of the plants appeared certain unless they could be divested of the destructive Lilliputian army which was feeding upon their blood. Having proved the effects of soda ashes as an insect destroyer in one particular instance, I determined to try their qualities upon the fly, and, if possible, settle them with it, even should it be at the expense of

the plants. I therefore took eight gallons of soft water, and added soda ashes sufficient to make it six times stronger than that which is stated above, and in the evening took the watering-pot without the rose, and poured the whole of the liquid all over the tops of the plants; and, to my gratification, the following morning the plants were alive, and not a living fly upon them. They were syringed with clean water, and from that time until they were removed from the ground, they received no check in their growth. J. B.

"APPLES.—In no section of the United States have we seen finer apples, and they are mostly from seedlings originally planted by the Indians. Silas McDowell, of Franklin, in Macon Co., has devoted more than twenty years to the selection and grafting of those best native apples, and now he has an orchard of more than 600 apple-trees, which bear fruit equal if not superior to the best northern kinds. There is said to be a line or belt on the mountain sides, about three hundred feet above the adjoining plain or valley, and extending upwards several hundred feet, where fruit trees always bear, because the belt is free from frost. If this be true,—and we believe its truth has been pretty well tested by experiment,—the mountains of North Carolina might supply the South with an abundance of the choicest fruit, if the means of transportation were good.—*Mr. Buckley, in the Country Gentleman.*

"HUCKLEBERRIES.—The Carolina mountains have a great variety of huckleberries (*Vaccinium* and *Gaylussacia*) ripening in succession from July to September. When we first met with acres of those bushes, in September, covered with large delicious fruit, the temptation was so great that we partook rather freely, expecting to pay the penalty of over-indulgence, but were happily disappointed. Judging from the experience of others and our own on many occasions, those berries are remarkably healthy. Most of them were larger than any we ever saw at the South. The *Vaccinium Constablei* of Gray, which sometimes grows ten or fifteen feet high (on Shining Rock), was covered with ripe fruit as late as the middle of October. There are several species of the huckleberry which are worthy of cultivation. The common high blackberry (*Rubus villosus*) is often found in dense patches on and near the mountain tops, with its stems smooth, and destitute of prickles. This rule is constant. We do not remember to have met with an exception. The same species growing in the valleys has its stems armed with prickles."—*Ibid.*

A SMALL GARDEN, BUT LARGE ENOUGH.—Persons who have but a small garden should remember the reply of Hahnemann, the homœopathist: "It is but a narrow patch, but there is no end of its height."

UNION SPRINGS SHADE TREE ASSOCIATION.—The beauty of a village, as every person of taste is aware, does not depend on its showy buildings so much as on its trees. Any place properly ornamented with trees is handsome; without them the most costly architecture is bare and unattractive. The inhabitants of Union Springs, a thriving village on the banks of Cayuga Lake, resolving to profit by these truths, formed an association, with the following regulations in substance:—Each member pays an admission fee of one dollar, which is applied in procuring and setting out trees in such places as the owners are unable or unwilling to plant—any additional sum from a member is expended in planting trees, at cost, along his own grounds or where he may direct.

The admission fee of the association amounted in the first place to some forty or fifty dollars—a part of which was from day laborers to be expended in work. The executive committee, after exploring the adjacent country, found a fine natural nursery of maples and other native trees, which they secured at five dollars per hundred. They were dug *with the roots*, (the roots are commonly cut off in such cases), and several teams were despatched for them. Over six hundred trees have been thus procured at a small cost, and have been placed along the streets; and if half of them grow and flourish, they will increase the market value of the lots they adorn at least ten times the amount of the expenditure.

This may not be the best mode, in every particular, of accomplishing so desirable an object;

but it may furnish hints for an improved mode of proceeding in other places. It will be perceived that in all such cases, cattle must be excluded from the streets.—*Country Gentleman.*

Miscellanea.

THE ALOE.—Something remarkable is reported of the aloe: a gardener near Paris one day scalded both his feet; he was quite alone,—no one within call; and compelled thus to shift for himself, he plucked a large aloe leaf, split it in two, and applied the raw surfaces to his feet. Much to his surprise, the pain at once ceased, and the leaf became of a violet color; while the next day no traces of the scald remained except a dark-blue stain. This curative property has been lately verified at the Museum at Paris, in a similar complete cure of a workman, whose whole back had been blistered by a rush of steam: and by Lemaire, professor of botany at Ghent, who cured the scalded arm of a cook in the same way. The aloe in question is the *Soecotrine*—that is, a native of Socotra, which, if desired, may be grown as an ornamental indoor plant, having a good leaf and flower. It is believed, however, that the aloe of the Cape of Good Hope would be equally efficacious.

SUGAR CANE.—When we ventured, in the face of the speculators in Sorghum seed, to ask what had become of the article in cultivation, we were called seriously to task. We had allusion to the original programme, which asserted that it was to supply the north with *sugar*. Soon it was reduced to molasses, and now doubters on that matter are increasing. H. Y., in the *Rural New Yorker*, says: "A few years since the production of *silk* was the popular hobby, and hardly any family 'with souls above buttons,' but what experimented in that mania, which was the universal topic of conversation and the trumpeting of the public prints: not a paper, daily or weekly, but what made this subject a constant theme, until silk worms and multicaulis ruined thousands. Where is the great speculation now?—gone to the tomb of the Capulets. There is great danger of a like result for the sugar cane. Its successful operation depends on so many contingencies—so foreign to the habits and abilities of farmers in general—requiring strong, well-made iron crushing rollers and evaporating pans, differing from anything in common use, that well-grounded fears may be indulged that this valuable addition to domestic comforts, and even as a profitable crop, will be abandoned and sink into the dark waters of neglect and forgetfulness.

H. Y.

Abroad, we find in some cases that success still attends the cultivators of the sorgho—Chinese sugar-cane—in France." The plant yields there excellent sugar; a farina obtained from the seed makes good bread and chocolate: alcohol and an agreeable tonic wine are extracted from the stem and leaves, as well as certain dyes, of tints hitherto supposed to be peculiar to China; and the residue is convertible into paper. Truly, a most useful plant. We are glad to hear that it has been introduced into Australia, where, in the seasons of drought to which the colonies are liable, it is found eminently useful as food for cattle."

We observe that Dr. Sicard, of Marseilles, has formed an interesting collection of the products derived from the sorgho, the Chinese sugar-cane, which has been much talked of lately. The number, 423, is already surprisingly large, and comprises portions of the plant itself, with the spikes and seeds; various kinds of flour made by grinding the seeds, and mixing the meal with other kinds of flour; specimens of sorgho bread; of sugars of different qualities; of the juice; of beer, cider, vinegar, and brandy, all made from sorgho juice; sorghotic acid; various dyes, carmine, red, rose, yellow, lilac, slate color, and grey; besides other preparations. The doctor has, moreover, written and published two volumes concerning the sorgho, containing a description of the plant, and of the processes by which it is to be utilized.



A VARIETY OF CYPRESS.—From the starting point of what is called species to the last form which this may take, in order to constitute varieties, the limits which are extremely variable cannot be fixed; in truth, every day they are presented in such different varieties of the individual one from which they sprang, that if the origin was not known they would be taken, without doubt, for a peculiar species. There are, however, some genera whose species, always few, yield to little modification; there are others, on the contrary, which seem disposed to vary, to metamorphose themselves into the most diverse forms. We shall return to this subject in future articles, when we treat the different questions of genera, species, hybrids and varieties; just now we shall only discuss the one figured before us.

The *Cupressus fastigiata cereiformis*: Carrière, *Cupressus Fernandii* Calumnatus hortorum very remarkable for both its bearing and appearance, is so from its mode of vegetation; in its bearing it recalls the general form of the *Cupressus fastigiata*, from which it sprang, although it is perceptibly different; in its mode of growth it is separate from it, as well as from the other varieties, and forms a peculiar type—a sort of monstrosity which must remain permanent, since it is reproduced from seeds. The very singular character which constitutes and distinguishes clearly this variety, is the complete and constant abortion of all the branches and their transformation into twigs, small and growing so closely together as entirely to hide the stem; on either side as they lay compactly along this, the whole forms a very straight column, which gives to the plant a taper (cierge) like appearance, from whence comes the name *Cereiformis*. The specimen growing at the museum, and from which our picture is drawn, is 8 years old; it measures 11 feet and an inch in height, 8 inches in diameter, comprising stem and branches, a diameter which is preserved through nearly its entire length, except near the top, where it tapers and ends in a very small point. We are indebted to Mr. Ferrand, Horticulturist at Cognac, for it, the only owner of this form, which he procured about 1838. He owns specimens of different ages and strength, which all have the same character; that is to say, that instead of more or less strong branches, they have only twigs. This last peculiarity is not, as one might suppose, occasioned by a want of vigor, since some very vigorous specimens 40 feet high are only 2 feet in diameter, everything included, in which size the stem makes one-third, or 8 inches. There are seeds of this last which, when sown, have produced specimens of different ages owned by Mr. Ferrand, and which he now offers to the trade. The unusual form of this variety makes it indispensable in coniferous collections.

Let us add, to give as just as possible an idea of the *Cupressus fastigiata cereiformis*, that the plate before us is reduced to the 20th of its natural dimensions.—*Revue Horticole*.

THE ORCHARD HOUSE.—It would be almost impossible to find a lover of horticulture who would not derive pleasure and instruction from reading the work of Mr. Rivers on Orchard Houses, which we continue in the present number. The owner of the smallest garden

pit will find principles laid down which he can apply in practice. Our late extensive experience with heavy frost in June is also an argument for the orchard house, which it is well to remember. With such a shelter fruit will no longer be a "pursuit under difficulties."

Perhaps, after all, one of the greatest advantages to be derived from the Orchard House will be found in its conquest over the curculio. The fruit is set and quite forward before the pest makes his appearance from his winter quarters, and then the fruit is too robust to be injured.

Correspondence.

A VISIT TO THE NEW YORK CENTRAL PARK.—About twelve months ago I sent you some remarks upon the respective merits of the plans that were prepared for the laying out of the New York Central Park, and then stated that the one to which the first prize was awarded was the most appropriate, and well chosen. This decision of the Commissioners was disputed by some parties, and, like everything else of a public character, there was not a unanimous vote in its favor. The majority, however, seem to have thought it best, and it is now becoming a practical reality on the ground site; consequently, a report of progress may be interesting to some of your readers.

To the uninitiated and careless observer, the whole may appear a huge confusion of rock-blasting, hoisting, carting, breaking up and leveling, on to here a road and there another, without connections, excavating of immense hollows, and raising the earth so removed into mounds of meaningless shapes; but a careful examination reveals to the mind's eye the developing, or working out, of graceful and easy curves in the carriage drives, and the *Bridle* and pedestrian paths, with corresponding undulations of a *grand* and finished character on the more level portions, while the *picturesque* features show a series of varied and becoming composition. There is a great distinctness between these two opposite forms in landscape, and in the example before us they are kept separate from direct vision, while they blend into each other, as it were, imperceptibly, as we travel to other spots. This, when finished, will produce a happy and pleasing effect, relieve the visitor's mind from monotony or tire, and give scope for the free use of all grades of intellectual enjoyment. The natural surface is well adapted for producing variety of scenery and convenience, as it embraces the running brook and silent lake, the flowery dell and rounded hill, the hollow cave and craggy rock, the secluded valley and elevated height,—all of which seems to have been well studied by the artists, and it is well they have accepted the advantages. Whether or no the goal of this desirable consummation will be reached, remains yet to be seen; but it is at present in a fair state of progress, and if there is anything like patriotism in our city fathers, they will supply the needful until it becomes a fixed fact.

Commencing at the principal entrance, Fifty-ninth Street and Fifth Avenue, the grade is a large level space sufficient for the accommodation of carriages in any number, from which the main drive on the easterly side begins, and traverses in an easy winding course around the entire park, deviating from the boundary so as to give a pleasant drive of some nine miles, without danger from steep declivities, and intersected at different points, by which a shorter distance may be adopted if desirable. Besides this there is a *Bridle* road of about five miles, beginning at the aforesaid entrance, conducted on away towards the centre, and then along the westerly side to the northerly end at Haarlem Flats; and in connection with this it is proposed to have a space for equestrian feats. The walks for pedestrians will extend to about twenty miles, meandering and coursing all manner of ways, around rocky bluffs, down to the water edge, along level grades, leading to the most elevated spots, deep into the ravine, now approaching the most public haunts, and again receding into solitude—accompanied by the always comfortable and neutral tint of green grass, and here and there conducted through *intended* shades of umbra-

geous growth, where the *pic nic* may be enjoyed *ad libitum*, either upon the extensive open lawn or under the shelter of trees; and it is gratifying to know that the foot walks are mostly contiguous to, or are conducted across, these inviting spots, where the romps of innocent youth may meet with no restraint; and, also, they are so arranged that nothing but the grossest carelessness can lead to danger from passing carriages or horses. In fact this point seems to have been well studied, as at most of the intersections there are to be bridges of various construction, several of which are now finished, which will admit of all crossing and re-crossing without interference.

Excepting a necessary straight line along the eastern margin of the *Croton Lake*, which the designers had no control over, there is only one such in the park, and this is the MALL, or Promenade ground. As we look at the plan upon paper it certainly appears as the spoliation of a principle: on the ground, however, it is otherwise; and considering its connection with the nearly parallel drive, and being not far from the entrance, the disparity is not noticed unless by the prejudiced critic. Now if we take into consideration the manners of our society, it is reasonable to suppose that we must have, in a public establishment of this nature, a part for promenade and the display of person; and surely we cannot, in justice to all parties concerned, deprive our fair belles and gallant beaus of such a desirable advantage. Besides, we should think of the unrestricted freedom that a straight line one-fourth of a mile long, two hundred feet wide, composed of broad belts of grass turf and gravel, overtopped with our *National Elm*, will give to the elastic trip of the rising generation, and leave principles "for the nonce" to go for what they are worth.

On the westerly side of the south entrance is a large hollow intended for a pond, the sides being bounded by irregular rounded bluffs of blue stone which, when interspersed with shrubs, suitable trees, and walks around the margin of the water, will produce a bold and pleasing effect. Extending further to the north is the large play and parade ground, and further on commences an unevenness of surface which furnishes two skating ponds,—one of which is exclusively for ladies,—and an opportunity to bring into view one of the most beautifully picturesque scenes that the eye of a painter could desire. This part is nearly completed in walks and outline, and also partly planted. It is to be hoped, however, that what trees and shrubs are placed here are only for temporary convenience, for there is at present nothing but a huddled confusion. If a permanency is intended the whole ought to be put under the control of some more qualified superintendent, and the work commenced afresh. Do let us have some regard to good taste, suitableness of character and situation, and beauty of outline in this respect; for surely we need some examples of superior merit to train the minds of our people, that they may more generally become acquainted with ornamental planting. Whatever the intention in futurity may be, there is evidently a great lack of ability here, for, under any circumstances, a part must remain, and then there will be no corresponding effect in either outline, form, character of connecting subject, or suitableness to situation. At any rate, the placing of *Swedish Junipers* immediately under the drip of the *Sassafras* does not augur well for effect hereafter; neither does the confused proximity of such varying forms as *Silver Maple*, *Linden*, *Paulownia*, *Hornbeam*, and others quite as opposite in present contour, or, what will be still worse, future effect. A meditated contemplation and careful study ought to be devoted to this department, as in a great measure the splendor of, and gratification to be obtained from, the whole hereafter, will depend upon the present arrangement.

The *Croton Reservoir* and Lake, containing about 140 acres, are nearly in the centre of the grounds. The latter is not yet finished, but will when filled constitute a noble sheet of water. Beyond or north of these the draining is going on, and further improvements are commencing.

It is intended that there shall be four transverse roads for the accommodation of the city traffic; and as they are to be conducted below the general level, there is much blasting and removal of rock, and excavation of other material. Two of these are now being constructed, and will be a heavy expense before completion.

The southern half of the whole area (774 acres) is progressing very rapidly, a great length of the roads and walks finished, with the general outline fairly developing, and by the end of the present year we may expect to have secured to the public some 300 acres of pleasure grounds of the most beautiful and gratifying character. Yours, &c.,

WILLIAM CHORLTON.

DEFENCE OF THE PRAIRIES.—*My Dear Editor*:—You could not have visited the prairie country at a more unpropitious season, for a succession of heavy rains had submerged the country, and my own grounds being torn up for tree-planting, road-making, and the like, must have presented a forbidding appearance.

Still your partial eyes discovered, it seems, something to be pleased with, as you desire me "after reading the *Horticulturist*" to write "a defence of the prairies." From this I inferred that you designed throwing us upon the defensive, but in the absence of an attack, where is the occasion of a vindication?

My preference for the prairies may be accounted for in a *very few* words.

Mountains figure more pleasantly in the eye and on the canvas of the painter than profitably in the domain of the husbandman. This needs no argument. Dense forests have their advantages and their disadvantages, the latter greatly preponderating. One generation cut down the timber and die. The next, seized with the malady incident to newly-cleared land, root out the stumps and *shake* to death. The third generation only begin to profit by the labor of their ancestors, from whom, with the record of their hardships and physical ills, they inherit also an occasional *quaking*.

And now let us turn to the prairie and find its rich, deep loam *all ready for the plow*, and promising exhaustless fertility. This wealth of soil and the freedom from rugged hills, from rocks, from stumps and from trees, (except in occasional groves which furnish abundant fuel,) and from other impediments to easy and profitable agriculture, prove indisputably the admirable adaptation of our prairies to the wants of the husbandman. But to the lover of Nature the prairie has attractions, apart from its ready and abundant rewards to the industrious son of the soil.

As I write, an almost limitless expanse of prairie stretches out before me, bounding the vision only with the horizon. The undulations, the groves and creeks prevent monotony. The depth of soil favors the most luxuriant growth of grain, and grass, and flowers, and this vast plain is clad in verdure of such depth of tone and with bloom of such exquisite hues, that I am confident were you here to witness it, and to see the occasional groves in richest foliage, and vast flocks of grazing sheep and cattle diversifying the scene, you would agree with me in pronouncing it enchantingly beautiful.

But one of my men has come in to tell me that some thousands of feet of tile (for the lawn) and an underdrain mole machine (for general use on the farm) have arrived, and I must be out to look after them. I have been planting extensively, &c., &c.

B., *Illinois*.

BOILING POTATOES.—Pick out your potatoes, so that the quantity you intend for dinner shall be as near of the same size as possible, and put into the pot with them sufficient water only to reach half, or a third of the way up them: they should never be covered with water. This is a most invaluable, although such a very simple receipt. I have had a square pot made for the potatoes; for a round pot, since they must not be piled one over the other, would not hold sufficient for any number of persons. In boiling potatoes for his pigs, which my informant did in a large copper boiler, he had observed that those uppermost, and partially out of the water, however small they might be, were invariably cracked and mealy, while those below were waxy.

C. P. C.

WHITE FOX GRAPE.—A correspondent in the May number of the *Horticulturist*, page 246, supposes he has the white fox grape alluded to by Major Le Conte, in the Patent Office Report for 1857. Now, if the gentleman alluded to has the true White Fox grape, he will readily

know it from all others, by the thick, velvety, buff-colored down on the under side of the leaf, (which is white on the black variety), and the coarse, hairy down on the young twigs, which are red, tough, and very slender; and the berries, which are enormously large, and from three to seven on a bunch; wood very short-jointed,—say, two to five inches long. There is another variety with leaves dark buff on the under side, and purplish white berries, said to be equal to the white variety, but it does not seem to be so stout a grower, and has not yet fruited, but will doubtless do so next season, when I will send you a drawing of each of them.

The vines were found in Georgia, and were taken up and brought here a year ago, and are now well established. They are, no doubt, seedlings from the Black Fox grape, as they came up in the fields where that variety once grew. The fruit on the vine is at this time, five times as large as the Isabella and many other kinds growing side by side with it. I think it will prove of great value, both as a table and wine grape, throughout the United States, as the fruit is said never to rot, is an enormous and early bearer, and seems to be equally hardy with the black variety, which is found growing wild from the Gulf of Mexico to the northern lakes. I expect to conduct many experiments with this grape, by hybridizing it with the best foreign and native kinds, and will keep your readers apprised of my success.

Enclosed I send you a leaf of each variety, which are now about half grown, (taken from a young shoot), by which you will see they are entirely different from any other grape known.

Bloomingdale Nurseries, Cuddy-hunk, Miss.

W. H. BURFORD, M. D.

NATIVE GRAPES.—The tourist to Lebanon Springs, New York, is of course familiar with the settlement of the United Society, two and a half miles south of that watering-place. They are familiar with the long high hill to be climbed in going from the latter to the former, so that we say, on reaching the settlement, that we are a good thousand feet above tide-water. The high bluffs of the Taconic, south and east, whose summits are far above them, tell of the seclusion of the earliest morning sun, on one hand, and break the sweet influence of the soft southern breezes on the other; while that valley, opening far to the north-west, shows conclusively that old Boreas can travel with telegraphic speed to vent his fury on the abrupt hill-side.

It was at this unpropitious locality that Philemon Stewart, a member of that enterprising Society, some twenty-five years ago, with the noble object of producing a palatable and hardy variety of grape, commenced their cultivation from the seed, and as the first fruit of this effort he was rewarded with the "Northern Muscadine"—a grape which is every year becoming better known and more popular among cultivators.

The excellencies of this grape, are, in the first place, its entire hardiness; for, as Mr. Stewart has lately informed us, he leaves the vine wholly unprotected in their severe exposure during our long, cold, and sometimes fluctuating (as to temperature) winters. Then, the grape has ripened well on his grounds for the last fifteen successive summers. It is a hardy grape, and ripens its fruit as far north as Detroit in Michigan, and Quebec in Canada. Amateurs pronounce it a good table grape, and the wine, the pure juice of the grape, made from it, of which Mr. Stewart shows several specimens, is beautifully flavored for the invalid, and sparkling. Its popularity as a grape worthy of general cultivation is increasing as it becomes better known, as the increasing demand for the vines fully affirms. But Mr. Stewart's ambition is not satisfied, nor do his labors rest here. He has now some fifteen hundred seedling vines under cultivation, from which it is no more than reasonable to suppose that some valuable varieties will originate. Indeed, some of these vines came into bearing last year, and several varieties, ripening from August through September, promise well. As the vines mature, the qualities of the fruit of these will probably improve.

Mr. Stewart is a philanthropist. His labors, watchfulness and care in grape-culture, have been arduous and unremitting, and Providence we have no doubt will give them success. What a blessing it will be to mankind if he brings out several new, hardy, and choice varieties, so that choice grapes may in due time overspread the poor man's cottage as well as the rich man's

arbor, and become the comfort and healthy luxury of all! God speed him and give him full success, for the labor in which he is engaged is a labor to bless mankind.

Yours truly,

WILLIAM BACON.

Richmond, Mass., June 1, 1859.

[The Northern Muscadine is valued at the North for its ripening where most other grapes do not succeed. We are not prepared to recommend it where we can have better. Will some one favor us with a sample the coming season from a vine of some age?—ED.]

DOWNER'S PROLIFIC STRAWBERRY AGAIN.—It will doubtless be recollected by many, that some of us made out a report and description last year of a seedling strawberry raised by J. S. Downer, proprietor of Forest Nursery, near Elkton, Ky., which report was published in the *Horticulturist*, and also in several other papers.

At the request of the above-named gentleman, we have again met to repeat our examination of this fruit, and we are pleased to state that another season's examination has but confirmed us in the opinions expressed in our report of last year. We have this season had an opportunity of examining this strawberry under different modes of cultivation: some are grown upon ground which has been well prepared, and the runners have been kept off the plants; others are on ground which has not been manured, nor had any especial care taken with its preparation, and the vines have been permitted to run without restraint. In every instance Downer's Prolific Seedling is, to our satisfaction, *vastly* superior in productiveness, to all other varieties known here.

When we take into consideration the vigor and hardiness of the plant; its early maturity and long continued bearing; the size and flavor of the fruit, and above all its unparalleled productiveness; it is without a rival.

Some of the committee examined this stawberry at intervals from the 6th of May to the present time; they find it ten days in advance of any other variety in ripening. At the present date (May 26th) it is perfectly loaded with berries in the different stages of development, from the bloom to the ripe fruit.

We deem it unnecessary at present to give a further description of this strawberry, as it would be no less than to repeat the one given by us last year, but will state in conclusion, that we regard the introduction of this strawberry among us as a triumph, and that we feel highly gratified to know that we now have a variety of this fruit in our country, upon which we can confidently rely—for an early, lasting, and abundant crop of delicious strawberries every season.

A. WEBBER, M. D., HOPKINSVILLE, KY.
W. H. SASSEEN, "
S. C. MERCER, "
JAMES S. PHELPS, "
BEN. H. BRISTOW, "
A. C. GOODALL, "
R. W. GAINS, M. D., "
T. G. HENRY, M. D., "
THOS. GREEN, "
THOS. S. BRYAN, "

ELDER J. M. BENNETT, PEMBROKE, KY.
S. J. LEAVELL, M. D., TRENTON, KY.
ELDER P. L. HENDERSON, DECATUR, ALA.
E. S. STUART, M. D., FAIRVIEW, KY.
R. VAUGHAN, "
H. W. DARNALL, M. D. "
E. T. CABANIS, ELKTON, KY.
J. G. ROACH, "
H. G. PETREE, "

State of Kentucky, Todd County.

I, BEN. T. PERKINS, Clerk of the Circuit and County Court for the State aforesaid, do certify that the foregoing is a true copy of the original report of the aforesaid committee.

And I do further certify that I am personally acquainted with said committee, and I unhesitatingly recommend them as gentlemen of high standing in the community in which they live, noted for their legal and scientific attainments, and as such most implicit confidence can be placed in their statements.

[Seal.] In testimony whereof I have hereto set my name and affixed the seal of the Todd County Court, this, the 2d day of June, 1859.

BEN. T. PERKINS, C. T. C. C.

[From the Homestead, Hartford, Conn.]

MASSACHUSETTS HORTICULTURAL SOCIETY.

IN the April number of the *Horticulturist* appeared a letter from Dr. Russell, of this city, commenting severely upon the course taken by the Massachusetts Horticultural Society, and especially by the Hoveys in their *Magazine of Horticulture*, in reference to the Pinneo, called by them Boston pear.

(The following we are assured was the action of the Massachusetts Horticultural Society in the premises.)

Saturday, May 7th, 1859.—A regular meeting of the Society was holden at the Society's rooms, at 11 o'clock A. M. The records of the last meeting were read and accepted. After the regular business of the day was finished, Geo. W. Pratt, Esq., one of the oldest members of the Society, asked leave to read portions of an article which appeared in the April number of *The Horticulturist*, and which reflected on the character of the Massachusetts Horticultural Society. Permission being given, the article referred to was read, and without discussing the question it was

Voted, That the whole subject be referred to a committee of five, with full powers to investigate the matter, and to report in full the circumstances of the case, and also what course it is advisable for the Society to pursue.

Messrs. Samuel Walker, Geo. W. Pratt, Marshall P. Wilder, B. N. French, and J. S. Cabot, were appointed this committee. Also,

Voted, That the same committee take into consideration the expediency of establishing a monthly journal, to be the organ of the Society.

After some discussion on various matters of interest, the meeting adjourned till the first Saturday in June.

I take the liberty of sending the above transcript of proceedings, as it is of general interest, and the report of the committee will be looked for with impatience, as it will show whether a society of the rank of the Massachusetts Horticultural Society will allow itself to be grossly deceived and involved in the unprincipled speculations of any nurseryman or horticulturist.

A MEMBER OF MASS. HORT. SOC.

Mr. Hovey, it will be seen, is obliged to mingle "humble pie" with his "Boston" pear—in short, is pinned by the Pinneo. We are sorry for him;—though a marvellously clever nurseryman, albeit not brought up to the business, nobody cares a farthing now for what Mr. H. calls his opinion. Like the woman of Samaria, he has had many of them, and that in such quick succession that no one can tell if the one he now professes to have is really his or not.

The subject thus brought up by the Society is one in which the public has a deep interest. It is worth while to inquire whether issuing magazines of horticulture from commercial gardens is quite the thing, or well for persons out of the trade. The example before us teaches the amateur that there is danger, at least, of interested error; the lovers of pure, unsophisticated horticultural pleasures will welcome the proposition of the members of the Massachusetts Society to edit themselves a journal of their own, and we hope to see it very soon. We may be sure ranters and brawlers will be excluded from its pages.

BUFFALO HORTICULTURAL SOCIETY.

SEVERAL meetings having recently been held with a view of reëstablishing this Society, (its operations having been of late suspended): it was finally reorganized on May 20th, by the election of the following officers:

President—Horace Williams. *Vice-Presidents*—E. G. Spaulding, Joseph Dart. *Treasurer*—Geo. F. Foote. *Recording Secretary*—Jno. B. Eaton. *Corresponding Secretary*—Thos. Stephenson. *Managers*—Dennis Bowen, James W. Brown, A. P. Thompson, Warren Granger, Richard Bullymore, Benjamin Hodge, Frederick P. Stevens, Wm. A. Coats, D. S. Manley.

CINCINNATI HORTICULTURAL SOCIETY.—The spring exhibition of this Society was a success. The Report was received too late for insertion. Of strawberries, as usual, there was a great show, and premiums awarded. We have a neat volume entitled "A brief History of the Cincinnati Horticultural Society, its Charter," &c., &c., which is valuable, and will be hereafter much referred to by the descendants, &c., of the present useful and active members.

THE PITTSBURG HORTICULTURAL SOCIETY held a highly interesting meeting on the 7th, 8th, and 9th of June, of which we have good accounts too late for insertion.





LABOUR.

For

THE HORTICULTURIST.

Published by J. M. AXTON, New York.

Avenues.



HAT celebrated improver, Shenstone, the poet of the Leasowes, occupied and amused himself in beautifying his place with artificial objects, avenues, lakes, and rustic designs. One of his plans was to create avenues in this mode: he planted large trees nearest the point of view, and smaller ones receding in height but approaching each other as the distance increased; the terminus of the view was a piece of water, an obelisk, summer-house, or some object of interest, and the effect was an increase of apparent distance; the object at the end was placed to the eye further off. This play upon the eye is one of the great arts in landscape making; you see its effects in the various daguerreian deceptions, not the least of which is the one by which the sight is made to embrace—to wind round an object—in fact, to deceive itself into a new use of its powers; in some cases to improve and give pleasure to one of our most valued senses. Very much may be done in landscape by a thorough understanding of the principles involved; without the principles, or without great observation of results, planting for beauty is mostly ineffective and paltry. The neighbors of Shenstone, whom he outshone, and with whom he was not popular, took pains to mortify him by showing company his vistas and avenues from the wrong point! looking through the little end of his telescopic views, which brought the point of view nearer, and the poor poet had to endure the shouts of laughter which resounded through the short tube he had made himself believe, from his own chosen point of view, was vastly longer than the sounds he heard would indicate. So it is: we all of us choose our own point of view, and when some rude body upsets our illusion with facts and figures, we are let down to realities.

As regards the most beautiful tree for deciduous avenues in the middle climate of the United States, or wherever it will grow, the best is the Tulip Poplar, *Liriodendron tulipifera*, especially if the avenue is a wide one, say eighty feet between the rows, while for an evergreen vista we would employ the Hemlock, *Abies Canadensis*. For narrower deciduous rows, the Sugar Maple would be our next choice. Two more beautiful trees for such a purpose cannot well be chosen. The Tulip Poplar is too rarely employed for this purpose; we do not know why such a beautiful and unique tree should be so much neglected, unless it be the difficulty of transplanting them of a desirable size. The time will come when purchasers will find it to their advantage to pay nurserymen for removing their young trees in the nursery rows, so that on their final moving a successful growth may be guaranteed; discriminating and experienced planters know the value of those that have been prepared for removal, but the masses do not; and until they do, it will not pay the grower to transplant his young stock annually.

A safe and almost sure practice to pursue with the Tulip Poplar, Sweet-gum, Sour-gum, Hickories, Magnolias, and all trees that are usually found impatient of removal, is, to cut them down to the surface of the soil as soon as transplanted. This seems to be a barbarous method, but we are convinced that many which otherwise eke out a miserable existence for

years, would grow up at once into healthy trees ; the finest Tulip Poplars we know of have undergone this process.

The Norway and Sycamore Maples are fine for shading walks, forming a dense, clean mass of foliage, and the former one of the best round-headed trees. Much of the beauty of foliage depends upon vigorous and healthy growth. We find that a heavy top-dressing of manure, applied in the fall, increases the depth of color and size of the leaves ; once in two or three years this will produce a decidedly beneficial effect.

In the Southern States the Live Oak and Evergreen Magnolia are unrivalled for avenues. Alas ! that they are denied to us.

We should not forget, too, the hickories ; an avenue of the best of these would be superb. It is possible, as Ruskin justly remarks, in this species of trees, to obtain a serene simplicity of grace, which is a better help to the study of gracefulness, as such, than any of the wilder groupings of the hills ; so also there are certain conditions of symmetrical luxuriance developed in the park and avenue, rarely rivalled in their way among mountains. *But*, "the resources of trees are not developed till they have difficulty to contend with ; neither their tenderness of brotherly love and harmony, till they are forced to choose their ways of various life where there is contracted room for them, talking to each other with their restrained branches. The various actions of trees rooting themselves in inhospitable rocks, stooping to look into ravines, hiding from the search of glacier winds, reaching forth to the rays of rare sunshine, crowding down together to drink at sweetest streams, climbing hand in hand among the difficult slopes, opening in sudden dances round the mossy knolls, gathering in companies at rest among the fragrant fields, gliding in grave procession over the heavenward ridges."

HOW WOOD IS FORMED.

BY YARDLEY TAYLOR, LOUDON COUNTY, VIRGINIA.

IN the 5th number of the present volume of the *Horticulturist* is an article headed "Bad Grafting—How wood is formed," taken from the "*Gardener's Chronicle*." The conclusions of the writer do not appear to be consistent with correct principles of vegetable physiology, principles now being received and explained by the late discoveries of the microscope in regard to growth, and which give a satisfactory explanation of that phenomenon. The positions advanced are based upon the supposition of the downward flow of sap in forming new wood, and that this sap is vitalized by the action of light in the leaves. A plate is given in which is shewn a large stock on the side of which a small scion had been whip-grafted upon "one side," and after growing together some time, "upon applying a little lateral pressure the scion came away," as represented in the cut, "bringing with it a considerable quantity of young wood." From these representations the conclusion is arrived at, that "the scion had formed a woody sheath of its own, which covered over the wood of the stock and was independent of it," and that "it is obvious, indeed, that the new wood is really derived in either a solid or liquid form from the two branches," that is, of the graft. That these conclusions are incorrect, I propose to show, first,

that no growth ever takes place in a graft but by the ascent of sap from the stock. We who are in the habit of grafting, know that, unless the union of the inner bark of the stock and graft is so close as to admit of the passage of sap upward, no growth can take place in the graft. It does not possess the power to send down growth to cover up the stock. When freshly cut wood, such as that of the stock and graft, is excluded from light and kept in a moist condition, granules of new wood are emitted at the junction of the wood and bark, but nowhere else; and if the two are in proper position, a union takes place from the affinity of each for the other; and this takes place before even the buds of the graft begin to swell, and before any leaves are developed to aid in sending down material for new wood as contended for.

Secondly, this theory of the downward flow of matter for new wood is shewn not to be true. The discoveries by the microscope have shewn, that growth is made by the deposition of cell matter, and that these cells are formed from matter imbibed by the sap from the soil, and deposited where formed; some are added to the extremities of the spongioles or rootlets, and thus the root is elongated; others are added at the sides to increase in size; and thus all the way upward they are deposited to form new layers of wood, and to fill up the pores of the sap-wood and gradually form heart-wood. The author of the article on botany, in the new American Encyclopædia now published, shows conclusively, that, considering the vast amount of water known to be given off by the leaves, and that this amount being taken in by the roots and containing mineral matter, or wood-forming matter, even in small quantities, there is abundant reason to conclude that sufficient is imbibed to account for all the growth we see. The downward flow of sap is by this writer entirely rejected.

In a late number of the *American Farmer*, is an article translated from the *Flore des Serres*, published in Belgium, by one of the editors, in which is the following paragraph: "Modern chemistry has afforded us many lights upon the nature of the elements that constitute the nourishment of plants, and if certain doubts or errors upon this subject still exist, they must not be attributed to science—that is always true—but to prejudices, of which unhappily we are not always willing to divest ourselves. Thus it is not correct to believe that the sap is elaborated and modified in the leaves, and that it redescends thence in the bark down to the roots. In fact, that is not possible. Doubtless the carbonic acid is decomposed in the leaves, but that act has no direct connection with the nutrition of the plant; it has as its sole object the preservation of the leaves for the purpose of transpiration. This truth will one day be generally recognized, when physiology shall have furnished the proof that the functions of leaves can only consist in transpiration, and that, in order to be able to fulfil these functions during their continuance, it is requisite that the cells of the parenchyma should be continually renewed."

Electricity is acknowledged to play an important part in the phenomena of growth, and the well known fact of the increase of growth by electrical action, together with the further known fact of the power of electricity to release oxygen from its compounds, and thus decompose carbonic acid gas, is strongly confirmatory of this view. The air and the earth are often positive and negative to each other; sometimes it is extremely difficult to excite electrical action by a machine, at other times it is easily done.

When the air is positive and the earth negative, every point of a leaf and every twig is a conductor to receive and convey the electricity to the earth ; and as it has a strong affinity for water, it passes through the sap exactly in the place to meet the carbonic acid gas, and decompose it precisely when needed for growth. Carbon being positive is deposited, while the oxygen being negative is given off, exactly as is done in the process of electrotyping. The same effect is produced when the earth is positive and the air is negative.

This principle being admitted, we have a satisfactory explanation of the "puzzling phenomena" that we meet with, and which have puzzled and ever will puzzle those who rely on a downward flow of sap. Water taken in by the spongioles and rootlets containing carbonic acid, and other matters derived from the soil, and carried up as sap, and in its passage being decomposed and deposited as growth in the plant, will account for all we see in growth. Fruit grown from a graft will be of the variety of the graft, and from the stock will be its variety ; thus we get clear of the difficulty met with by those who contend for the downward formation of wood, and find the stock to produce not the variety of the graft but its own.

This writer speaks of a willow which formed a sheath of wood several feet long over dead wood and beneath dead bark ! I myself had a willow that was cut down about four feet above the ground ; and on one side shoots put out near the top and grew to considerable size, at the same time the other side of the stump died and became rotten ; when afterwards in removing the rotten part it was found that roots had put out of the new growth and descended through the rotten wood to the ground. Here is nothing strange ; roots ordinarily never put out in the open air,—but in a dark moist condition, when materials for growth are to be had, they always do so under favorable circumstances ; and the putting forth of roots under dead bark, only shows the efforts of nature to overcome impediments to growth.

In the plate referred to, there is a cross-section of the head of the stock and the insertion of the graft, showing the deposit of new wood near this junction alone. This is just what we might have expected, as no wood could be deposited but where a flow of sap could take place ; consequently, on the side opposite to the graft there could be none. The cut parts of a graft and stock never unite, it is only the addition of layers of new wood enclosing them that makes a union.

This writer considers there are "two distinct systems of organization in our common trees, the one longitudinal, a mere provision for carrying the sap,—the other horizontal, called the medullary system ;" and that "the latter alone has the power of furnishing new shoots ;" that "it is perpetually growing outwards and fitting on its myriads of extremities to the surface of the wood beneath the bark ;" and these two are simultaneous in their appearance, and coëxistent and coëval, but independent." To this it may be objected, that as the "medullary system," however important a part it may act, cannot be increased or continued in growth, but by the "provision for conveying the sap," it cannot be "independent" as claimed by this writer. "New shoots" are formed only by the accumulation of sap, and to say that "the provision for its conveyance" has no "power of furnishing new shoots," is giving "the medullary system" a character that known facts will not warrant. It has no power of increase, no separate action of its own, but is dependent entirely on the circulation of the sap for any increase.

To suppose that new shoots "necessarily come from the horizontal or medullary system," is making a distinction without a difference, for we all know that "the system for the conveyance of the sap" is included in every shoot, and without it it could not live nor exist. Many kinds of deciduous trees, if cut down in winter, on the approach of spring, by the accumulation of sap, will put out new shoots around the stump and grow off rapidly. Whether they are based on "the medullary system" or not, they are produced by the accumulation of sap, and that often where no previous buds had existed. Some writers have appeared to believe that they only appear where latent buds have existed; but this view is not borne out by facts. Their number is often many times more than the number of buds that ever existed in the same length, and even if there had been latent buds, where were they? they only could be in the outer epidermis or dead part of the bark, and could in no case have any connection with the living tissue, from which alone the shoots took their rise.

What the writer means by the terms, "physiological heretics" and "orthodox" in this question, is not easy to see; the science of vegetable physiology is too young yet for any but the credulous to assume the title of orthodox in its profession, and brand others as heretics. It may be with this as it has been with religion: those who by the majority were called heretics, were in truth the really orthodox, while those who claimed that title, by their actions gave the lie to their professions.

The animadversions of this writer on improper trimming of fruit trees are well-timed, and should be heeded by all who wish to take nature for their guide, and conform their action to her laws; but there is another kind of mutilation that is doing incalculable injury to the orchards in this country, and that is the deep cultivation in cropping our orchards. We cut and tear off all the surface roots of our trees, and compel them to force their roots down into a colder and more barren soil, barren at least of vegetable matter, and if we apply manure the crop is benefited but not the trees. This manner of treatment has injured our orchards greatly, and we shall ultimately find that we shall have to treat our orchards as we do our other crops,—allow them to have the full benefit of the surface soil, and grow no other crop with them, at least after the trees attain some size. If fruit is an object it is worth while to appropriate land to it alone; if it is not an object, trees should not be permitted to occupy the land to the detriment of other crops.

NABOURS PEAR.*

WE have thus far been unable to find out where or when this pear originated, with any degree of certainty; it seems to have come from South Carolina into this section of the country, and is pretty extensively disseminated over the State of Georgia. Size from medium to large; form elongated turbinate; stem from one and a half to two inches in length; basin shallow; calyx of medium size; color greenish yellow, thickly covered with grey russet specks and tracery; flavor buttery, juicy, and sweet; flesh white. Ripens during September. Quality nearly best. Tree a vigorous grower on either pear or quince stock; shoots stout and greyish purple in color; leaves very large, coarse, and nearly round; in appearance, the tree resembles the Rostiezer very much.

J. VAN BUREN.

* See Frontispiece.

THE ORCHARD HOUSE, OR THE CULTIVATION OF FRUIT TREES
IN POTS UNDER GLASS.

BY THOMAS RIVERS, OF THE NURSERIES, SAWBRIDGEWORTH, HERTS.

Concluded from page 311.

THE HEDGE ORCHARD HOUSE.

Some thirty years since, I planted numerous beech hedges for shelter ; these stand with their ends S. E. and N. W. A few years ago their S. W. sides looked such compact green walls, 8 feet high, that I was tempted to rear against them four lean-to houses, each 40 feet long and 12 feet wide, 8 feet high at back, and 3 feet high at front, with a sunken path in the centre. The climate in these houses in the summer months is most delightful. Tea-scented roses, magnolias, and other shrubs liable to injury from our severe winters, thrive admirably, owing to the dryness of the soil and air. Apricots and peaches ripen about three weeks or a month later than those on walls ; but, owing to the quantity of cold air admitted through the back hedge in spring, their blossoms often suffer in April, if frosts are severe. I found this to be the case in 1854 and 1855 ; this induced me to build some small span-roofed houses, 12 and 14 feet wide, 4 feet high at the sides, and, instead of using boards, to plant them with hedges to form the walls,—one with yew, the other with Siberian Arbor Vitæ. These are clipped twice in the growing season ; they now form compact hedges, and seem to flourish all the better for the drip from the glass which pours into them when it rains heavily. I mention these span-roofed hedge houses, not only because their climate in spring, summer, and autumn, is most charming, and perfect as a promenade for persons in delicate health, but for their convenience in retarding fruits. The trees bloom ten or twelve days later than those in the regular orchard house, and generally escape injury from spring frosts ; there is such a constant percolation of air through the hedges when the sun shines, that the healthy growth is surprising. If Royal George and Noblesse peaches are to be retarded, they may be removed from the boarded orchard house to the span-roofed hedge house from the first week in June till August ; they will ripen about three weeks later than those left in it. Apricots, plums, and pears ripen well in these houses, and are always perfect in flavor ; cherries are liable to be eaten by birds which creep through the hedges. The great charm of them is, their perfect ventilation without any trouble. For many kinds of greenhouse plants they will be found the best of summer quarters ; the increased temperature in sunny weather, from 15° to 20° above the open air, and the absence of heavy storms, which so often injure exotics when placed out of doors in summer, are most advantageous to their well doing.

THE TROPICAL ORCHARD HOUSE.

An orchard house for tropical fruits has long been with me a favorite idea, and recently, from my having had a daughter return from a nearly two years' residence in the West Indies, it has received a fresh stimulus. The variety of tropical fruits seems almost endless ; some of them, if I may judge from description, are too rich, others too insipid for English palates, and of the greater part the trees that bear them would require a house far beyond

the means of the amateur not blessed with a large fortune. I will, therefore, for the present, confine myself to a tropical orchard house for fruit trees of moderate growth, not extravagant in its dimensions, and yet capable of giving many luxuries. The small span-roofed house, with some little modification, (described in pp. 257, 258,) seems best adapted for this purpose : its sides should be five feet in height, three feet of which should be 9-inch brickwork, and two feet (the upper part) of glass, with sashes two feet long, on pivots or hinges, at intervals of five feet for ventilation in hot weather ; it should be glazed with double crown glass, which is very clear, and rarely gives occasion to scorching. Its height should be ten feet, the path two and a half feet wide, and the borders on each side four and a half feet wide, raised with brickwork to sixteen inches in height. In the centre of each border two 4-inch hot-water pipes should be laid, and then a flooring of slates laid across from wall to wall of each bed, so as to leave a space for a hot-air chamber ; six inches of the brickwork must be carried up above the slates so as to form a hollow bed with 6-inch edgings to support the mould, which must rest on the slates to form the perpetual hotbed, on which the pots are to stand. The compost for this border should be two parts turfy sandy loam, lumpy as possible, one part rotten dung, and one part bricks broken into small pieces from the size of a nut to that of a walnut, with their dust ; these should be mixed with the above, to keep it open and favorable for drainage, and a border of mould made with it on the slates, four or five inches in depth. A perpetual hotbed is thus formed.

So far this is a safe and necessary step ; but the hot-bed will not heat the air of the house sufficiently in the damp and chilly days of winter. This must be done by two 4-inch hot-water pipes carried round both sides of the house, next to the walls, just above the surface of the borders. The atmosphere of a house thus heated should range, in spring, summer, and autumn, from seventy to ninety degrees (the latter only in sunny weather), and from sixty to seventy in winter, *i. e.*, from the end of November till the middle of February.

It is well known that orange trees, cultivated in the usual way in France or England, never give fruit at all eatable, solely from their lack of heat at their ripening period late in autumn and winter. In Grenada (West Indies) they commence to ripen towards the end of October in a temperature varying from 70°* to 80° or thereabouts ; their flavor there, freshly gathered from the trees, is so delicious that they are far superior to those we receive from St. Michael's and other places, all of which are gathered before they are ripe. In our tropical orchard house oranges would ripen about Christmas. How agreeable to be able to gather a portion of the Christmas dessert from one's own trees !

The orange will, I have no doubt, form a distinguished feature in this mode of fruit culture. I will, therefore, commence with directions for its cultivation. As an ornamental tree in the greenhouse and conservatory, it is an old friend ; and perhaps no tree in the known world has suffered, and does suffer, such vicissitudes, yet living and seeming to thrive under them. It *glories* in a tropical climate, and yet *lives* and *grows* after being poked into those cellar-like vaults used for its winter quarters on the Continent ; it gives flowers in abundance under such treatment, and would even give its fruit—albeit uneatable—if permitted. Nearly the same kind of cultivation has been followed for many, many years in England : it has rarely had

heat sufficient to keep the tree in full vigor, and its roots in pots or tubs must have suffered severely from having been placed out of doors in summer on our cool damp soil, and in winter on a stone floor still more cold. If roots could make their complaints audible, what moanings should we hear in our orangeries all the winter!

In cultivating the orange for its fruit, the first consideration is to procure some of the most desirable varieties; such as the delicious thin and smooth-rinded oranges which we receive from St. Michael's; the Maltese blood-orange, and the Mandarin: with the present facilities of transport, young trees of these could be procured. The latter, called also the Tangerin orange, deserves especial notice, as it proves to be the hardiest, as well as the most excellent in flavor, of any yet introduced. It will do well in a common greenhouse; and, when placed out of doors in June, it ripens its fruit of fine flavor in September; which remain good on the tree for six months. This delicious little orange is only eaten in perfection when fresh from the tree. In Lisbon it is sent to dessert in clusters with leaves attached to them: unless these are quite fresh and green when the fruit is served, it is not reckoned in full flavor. If grown in the tropical orchard house, the trees should be placed in the coolest part of it, and have abundance of air in mild weather in winter; they will then bloom later, and set their fruit with greater certainty. They should be placed out of doors in June (so that the fruit ripens slowly), and replaced in the house in September.

There are also some sweet oranges cultivated in France, of which trees could be readily introduced; but the first-named varieties seem to me most worthy of the careful cultivation to be given them in the tropical orchard house. The first matter of import is the soil best adapted for the orange; there are many receipts given in our gardening books, but the most simple compost of all, and one that cannot fail, is the following: two parts sandy loam, from the surface of some pasture or heathy common, chopped up with its turf, and used with its lumps of turf about the size of large walnuts, and its fine mould, the result of chopping, all mixed together; one part rotten manure at least a year old, and one part leaf mould; to a bushel of this compost add a quarter of a peck of silver, or any course siliceous sand—calcareous sand and road sand are injurious—and the mixture will do for all the fruit trees of the tropical orchard house, as well as for oranges. In potting the orange it is better to commence with a pot too small rather than too large; for, unlike the peach or the plum, it does not feed rapidly and at once fill the pot with roots. Thus a tree two or three years old, may be potted into a 9-inch pot, suffered to remain for one year, and then removed to a 13-inch pot, perforated as for other orchard-house trees, in which it may remain (unless the house is very large, and a large tree is wished for) six, seven, or ten years: a portion of the surface soil should be annually removed early in February, as directed for other orchard-house trees, but not deeper than from three to four inches, and the pots filled up with the above compost; and about the beginning of March a surface-dressing of manure should be given. I have observed that the French cultivators strew fresh sheep's manure on the surface; they also place their trees in a pure peat earth. I have not seen this mode of culture in England, but it may be tried where peat is abundant. Two other surface-dressings of manure should be given, one in June, the other the beginning of September. The trees will of course be placed on the hotbed, or plunged slightly two or three inches into the mould.

I am not, however, an advocate for plunging to any extent, unless very rapid growth is required, for I find that trees in pots standing on a bed of heated mould and rooting into it, make a healthier, although a slower growth. As soon as the fruit is gathered, which ought to be by the beginning of February, when foreign oranges commence to be good, the trees should be lifted and root-pruned, as directed for peaches, and top-dressed.

Orange trees should have a portion of the house to themselves, divided by a light glass partition, as they require and will bear more ventilation than other tropical fruit-bearing trees. Thus a portion of the small span-roofed house should be appropriated to them, so that they are placed on both borders, the other part of the house being occupied with mixed trees and shrubs. Air can then be given to them by opening the sashes on one or both sides, without interfering with trees and shrubs requiring less ventilation.

Orange trees when grown constantly under glass are liable to a black fungus on the upper surface of the leaves; this can only be removed with a sponge and warm water; they should be syringed with soft tepid water twice a day (at 9 A.M. and 5 P.M.) during the summer, and once a day in the morning in sunny weather, in early spring and autumn; while the fruit is ripening in the winter, syringing should be discontinued. It is the custom to cultivate orange trees in square boxes made of oak. I am inclined, however, to recommend pots perforated at bottom, as usual with other pots used for orchard-house trees; the slate pots made by Mr. Beck, of Isleworth, are very neat and even ornamental; with the usual five or seven perforations, they would doubtless answer very well. If wooden boxes are used they should have bars at the bottom to allow the roots to make their way into the hotbed.

(Mr. Rivers here devotes a few pages to the cultivation of the Mangosteen, the Chirimoya, the Pomegranate, the Lee Chee, the Loquat, the Guava, the Granadilla, Mango, Dwarf Plaintain, Rose Apple, Sweet Lime, and the Sapodilla, all which we believe, may be successfully fruited. Those intending to cultivate these will have reference to the book itself.—ED. HORT.)

The Fig. This may be made a most desirable tropical orchard-house tree, and so managed as to give its quota to the Christmas dessert. Trees of one or two years old, that have been protected from the winter, in a cold pit, should be potted early in May into 13-inch pots, and protected from frost by being placed in the orchard house, or any cold frame or pit, till the first week in June. They may then be placed out of door for the summer in a sunny exposure, sheltered from boisterous winds. Liquid manure may be given to them once a week, and they should be lifted once a fortnight, to prevent the roots which would make their way through the bottom of the pot from becoming too large. They may remain in their summer quarters till the end of September; but if one or two frosts occur in that month, they should be protected by having a piece of calico or a little hay thrown over them. At the end of the month they will be covered with young green figs, and if removed to the tropical orchard house they will ripen their fruit towards the end of November and through December. If it is wished to retard the ripening of the fruit on some of the trees, they may be placed in the common orchard house or a cold-pit till the first week in November. They will then, on being removed to the tropical orchard house, mature their fruit even as late as January. The most prolific and best varieties for winter figs are the White Ischia, (this is sometimes called incorrectly the Nerii: it is a most abundant bearer,) the Brown Turkey, or, as it is often called, Lee's Perpetual, and the White Marseilles.

I have in these few pages given the outline of what may be done towards increasing our garden luxuries. The culture of tropical fruits is not a new idea ; but I have endeavored to give a new version of an old idea. There is now no occasion for the bark-bed, in which it was once thought necessary to plunge the pots containing the plants of all tropical fruits. A perpetual hotbed, on which to place the trees—which may or may not be a new invention—is now easily formed by hot-water pipes : and I well know, and again say, that a tree standing *on* a hotbed will make a healthier although slower growth than one that is plunged *into* a bark-bed. Moreover, the latter is always disagreeable from its requiring to be turned and renewed, as well as from its unpleasant smell.

It will be seen that I have confined myself to the description of a comparatively small tropical orchard house ; this I have done that I might be consistent. Large gardens have, for the most part, great gardeners who know how to build houses, if the means are provided, much better than I can tell them ; but when the system of culture is understood, I can see no reason why the large span-roofed houses described should not be built in gardens of moderate size. The great object is to have abundance of heat at command ; the central border, therefore, in a large span-roofed house would require four 4-inch hot-water pipes, each side border two ; and to heat the air would require four 4-inch hot-water pipes round the sides. In such a house the trees might be suffered to grow to a goodly size and give a great abundance of tropical fruits from the delicious little Lee-chee to the exquisite freshly gathered Maltese orange.

I have been content with the enumeration and description of only a few tropical fruits ; when their culture is better understood the list may be extended ; for in all tropical climates there are numerous fruit-bearing trees and bushes utterly unknown to English gardens. It may perhaps be said that some of the kinds of fruit I have recommended, will form trees too large for a house of the dimensions given : this ought not to influence the cultivator ; for, as is well known, the fig grows into a very large tree when the soil and climate are favourable, and yet bears well in a pot of moderate size. Collectors have for many years past paid much more attention to Orchids and Pines than to tropical fruits, only because their culture has not been carried on in England with spirit. Let us hope that, owing to the introduction of hot water as a means of heating, the low price of glass and bricks, and the low price of timber, we shall see tropical orchard houses rising up and rivalling the now numerous orchard houses in their agreeable results.

INSECTS AND HOW TO DESTROY THEM.

The numerous species of aphides under the name of “blight” are, as is well known, most troublesome enemies to all fruit trees in the open air : one regrets that orchard-house trees are not exempt from their visitations. Each species of fruit tree seems to have its peculiar aphid. There are, however, two which attack the peach and nectarine ; the brown aphid, which often makes its appearance on the young shoots and buds in November and December, and the green, which generally attacks the trees as soon as the fruit is set on the young leaves unfolded. These are easily destroyed by tobacco-water, made by infusing two ounces of tobacco in a quart of boiling water, and applying it when cool with a middle-sized painter's brush in the following manner :—With the left hand place a piece of slate or glass

against the shoot, so that it rests against it, and then dip the brush in the water and brush upwards: if the first application does not kill them, it must be repeated.

This will destroy all the tribe, even the hard-to-be-killed blue aphid, peculiar to the plum, and the black which so often infests the cherry.

Another mode of destroying them is by fumigation, which is the most eligible when a large number of trees are infested. This is best done in the evening, and most economically with tobacco. The next morning the trees should be syringed with all the force possible, by applying the syringe close to each. Another mode of fumigation (and this is convenient when only a tree or two are infested) is, to envelope the tree in tiffany or thin calico, and then place under it a small pot of ignited tobacco paper. In all cases the dead and dying insects should be washed off with the syringe. "Sigma's Aphid Powder," sold by Mr. Powell, Ticehurst, Sussex, is also a convenient and efficient aphid destroyer: this is best applied, by a dredging box with a muslin cover, to the under surface of the leaves; it should be suffered to rest upon the leaves for eight or ten hours, and then be washed off with the syringe.

In the orchard-house culture of peaches and nectarines, syringing must play an important part; for the red spider is so fond of their leaves, that, like Sindbad's Old Man of the Sea, he will stick closely, and cannot be dislodged without applying the syringe close to the under surface of the leaves. If this pest be suffered to make the least progress, the flavour of the fruit will be entirely destroyed. A small pocket lens, in the hand of the amateur, will be the best instrument to discern it; looking closely at the under surface of the leaves, if it be there, a small bright-red speck, like a red grain of sand, will be seen. The experienced gardener does not look for them. One glance at the upper surface of those leaves, which show some minute yellowish specks, is quite enough for him. If, therefore, the least sign be apparent, continue the regular syringing, even till the fruit is ripe; otherwise, syringing may be discontinued, when the peaches and nectarines commence to soften, preparatory to ripening.

A very excellent mode of using sulphur has just been given in the "Gardener's Chronicle," No. 1, p. 5, by Mr. Gardener, of Rossall Hall, Fleetwood. "The house being shut up quite close in the evening, some large flower pots (say 13-inch pots) were half filled with fresh unslaked lime: this was sprinkled with water, and a handful of sulphur strewed over it, and suffered to remain all night. The next morning the house was syringed till quite saturated." This will not only destroy the red spider, but also the mildew on vines, and is, in my opinion, one of the best remedies ever discovered. As prevention is better than cure, I advise all lovers of orchard houses and vineries to apply it once a week through June and July. I am inclined to think that this simple remedy will do away with the necessity of the constant syringing I have recommended; and if so, the fruit will be improved in flavour. It is at any rate quite worthy of a trial.

MONTHLY CALENDAR FOR THE MANAGEMENT OF THE ORCHARD HOUSE THROUGHOUT
THE YEAR.

January.—Observe the same rules for protection against frost, and give water, if necessary, as directed for December. In bright sunny weather the

the ventilators may be opened, to lower the temperature and prevent the blossom-buds from swelling prematurely.

February.—Continue the same rules for ventilation and protection as directed for January: towards the end remove the trees to their summer stations, making one for each tree as directed in page 265.

March.—Early in the month all the trees should be pruned according to the directions given under each kind of fruit. Watering may now be extended, unless the frost is very severe, giving a quart to each tree, and gradually saturating the earth.

If the weather be sunny, with sharp frosty nights, the shutters, both back and front, may be open from 9 A. M. to 4 P. M., and closed at night. If the weather be cloudy with frost, the shutters should be closed night and day. Apricots will sometimes bloom in the middle of this month, before the other trees. If the frosts are severe at night, it will be well to throw a piece of tiffany over such as are in bloom, removing it in the morning; this is so light that the blossoms will not be injured.

April.—Observe the same regulations as in March, as to ventilation. In the beginning of the month the trees will in most seasons be in full bloom. If severe frosts come on, which is sometimes the case, and the thermometer in the open air descends to 24° in the evening, a fire, consisting of 6 or 8 quarts of charcoal, should be placed in an iron pan in the centre of the house: for a house 30 feet long one pan will do; for one 100 feet long, three pans will be required. Whenever charcoal is burnt, the ventilators over the door or doors in span-roofed houses should be left open, and a portion of the top ventilators in lean-to houses.

Towards the end of the month, when the fruit is set and commences to swell, syringe the trees morning and evening with soft water, or spring water that has been exposed to the air for a few hours. Place the syringe close to the under surface of the leaves. If the weather be dry and warm, the trees, if the earth is dry, may be watered in the evening, giving to each from 1 to 2 quarts of water. The aphides will now begin to make their appearance. Their destruction must be seen to, as directed in pp. 354, 355.

May.—Observe the same regulations as to watering and syringing the leaves, as in April. Ventilation must now be strictly attended to: in all descriptions of weather the ventilators must be open by day from 8 A. M. to 6 P. M.; but, if the situation of the house is exposed, so that the N. E. wind can blow through it, it will be as well not to open the ventilators that will admit that or the east wind when it blows fiercely. Worsted netting, with meshes just large enough to admit the point of the finger, is a most excellent material to place over the ventilating openings inside, to remain all the summer. It softens the violence of a brisk gale, and yet admits plenty of air. It will be found most useful near large smoky towns, for the fibres of the worsted meet in the meshes and keep out sooty particles; insects also never attempt to enter. A clever orchard-house cultivator, living at Bow, near London, has found this worsted netting of great value, for his orchard-house trees are as green and as fresh in summer as if they were in the country, instead of being in the midst of smoke. Aphides will now be very active, and must be destroyed. Apricots will also be infested with a caterpillar in their young shoots; the ends of them must be pinched, so as to crush it.

June.—Syringing at 7 A. M. and 6 P. M. must now be strictly attended to;

and, if the weather be hot and dry, the trees will require watering abundantly every evening. My trees in 13-inch pots and seven years old take one gallon each. All the ventilators should be open from 8 A. M. till 6 P. M. Some fresh top-dressing of the usual compost may now be added, if the surface of the earth in the pots has become hard and close.

Commence to thin the fruit and pinch in the laterals, as directed in page 268, particularly of the figs.

The red spider now requires particular attention, and the pocket lens must be brought into use. If syringing fails to completely extirpate it, lime and sulphur, as in p. 355, must be resorted to. Remove plum-trees to the open air, to ripen their fruit, if there is a scarcity of room in the house; also apricot trees (see pp. 266, 300.)

July.—Thorough ventilation must be attended to—it is a good practice to fasten back and front shutters, so that they cannot be closed. Syringing and watering as in June. If any of the trees are growing grossly and too rapidly (particularly figs) gently tilt up the pot on one side, and cut off all the roots on that side that are making their way into the soil, and a week after do the same with the other side. Renew the top-dressing, if the surface has become firm from repeated watering. Frequent top-dressings in summer are better than manure water. Pinch in lateral shoots to within two buds of their bases, to prevent the tree being crowded with shoots and leaves (see p. 268). The compressed earth in the pots gives vigor almost beyond belief.

Remove pear-trees to the open air to ripen their fruit; also peach and nectarine trees (see pp. 270, 305).

August.—Ventilation and watering the same as in July; syringing till the fruit begins to color, or, if the house can be kept perfectly free from the red spider by lime and sulphur, discontinue it from the last week in July. Still pinch in laterals, and, at the end, pinch off the points of all the leading shoots, except figs; these will not require any further pinching.

Remove peaches, nectarines and apricots to the hedge orchard house, or to the open air, to retard their ripening, if required.

September.—Ventilation as in August, unless the weather be peculiarly windy and stormy. In such weather the house may be closed: watering must be continued, but no syringing. Pinch in laterals, if they still persist in growing.

October.—Ventilation and watering as in September. About the middle of the month every tree—except late peaches with their fruit still on them—should be lifted, and all its roots cut off close to the bottom of the pot; and about the 24th, top-dressing must be done (this is described in p. 264), and a gallon of water given to each tree. They may now be placed close together, so as to give room for other plants, particularly Chrysanthemums, which bloom well in the orchard house all the autumn. Prune vines in pots (see p. 306).

November.—Ventilation the same as in October. On the 5th give each tree a gallon of water, the last for the year. The autumnal top-dressing and watering encourage the emission of young roots, so that the tree is prepared for its fruit-bearing work early in spring. If the brown aphid makes its appearance on the young shoots and buds, use the brush and tobacco-water, as directed in pp. 354, 355.

December.—The house may now be shut up day and night. A registering

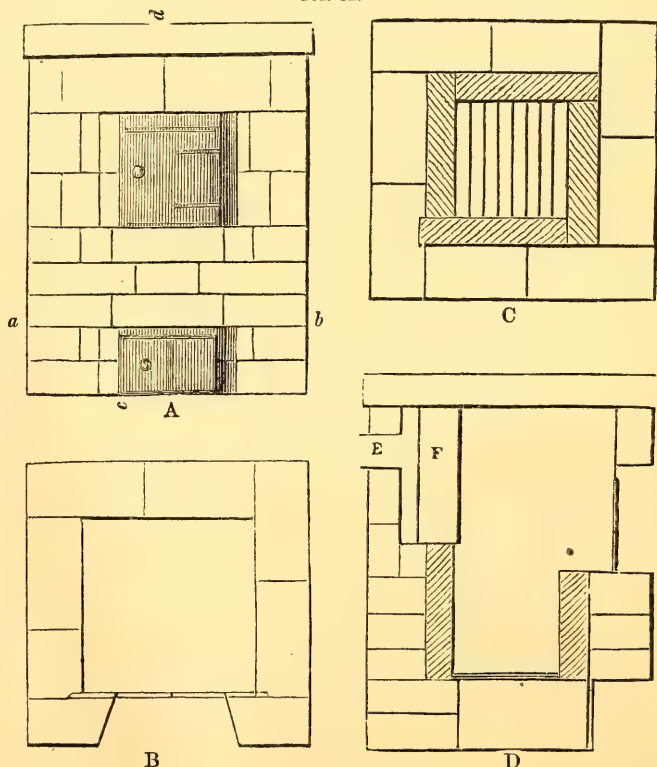
thermometer should be kept inside; if at any time this denotes a night temperature of 20° , some dry hay or litter should be placed among and on the pots, to six inches above the surface; this will keep their roots from injury by frost.

If the weather be windy, dry and mild, observe if the trees are inclined to shrivel from being too dry; if so, give each a quart of water at 10 A. M.; otherwise, no water all this month. If they shrivel from severe frost, it will not matter, for as soon as a thaw comes they will recover. Pay attention to the brown peach aphid.

CONCLUSION.—I appear in the foregoing pages to have employed a great number of words in the endeavor to make plain this simple, agreeable and novel mode of cultivating fruit trees. Judging from my own feelings, its advantages and pleasures are manifold. Each bud, leaf and blossom is brought close under the eye of the cultivator. All the minute and beautiful

THE BRICK ARNOTT'S STOVE.

FIG. 12.



A, front elevation; B, ground plan; C, horizontal section through *a b* in A, showing the fire-bars or grating; D, vertical section through *c d* in A, showing the front and back fire-lumps, the former reduced to nine inches in depth; E, iron pipe leading to the chimney; F, fire-lump, placed an inch and a half from the mouth of the pipe leading to the chimney, and about the same distance from each end: this causes the smoke to pass round, thus preventing a too rapid consumption of the fuel. The courses of bricks in height are laid flat.

operations of nature can be closely watched in a genial climate. The silvery covering of the peach blossom-bud,—the beauty of its fully developed flowers (how fresh and happy they always look!)—the anthers shedding their pollen,—the germs gently swelling,—the downy, ruddy, luscious-looking coat of its charming fruit, are all calculated to give pleasure to the healthful, cheerful mind; for the varied works of Nature's laboratory are brought near to the eye, near to the mind, near to the heart, which is instinctively lifted in thankfulness to the Giver of all such good and beautiful things.

The above figures, the blocks of which have been kindly lent me by the editor, appeared in the "Gardener's Chronicle" for January 24th, 1846, and a description of them was given in the same paper for January 17th in the same year (p. 266).

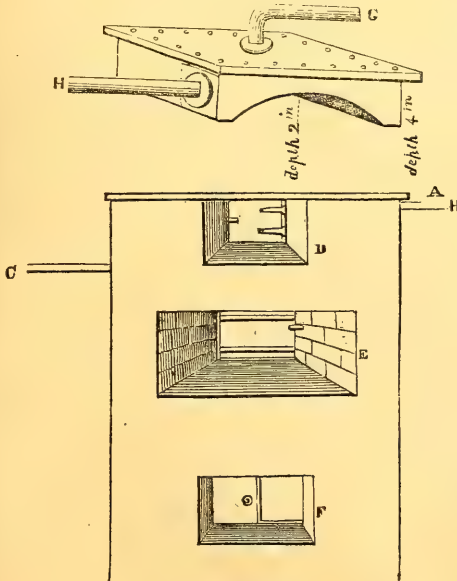
I had then four in operation; I have now twelve; and have never yet seen any mode of heating small or moderate-sized houses so efficient.

For a house twenty to thirty feet long by twelve, a stove two feet four inches square, outside measure, and three feet ten inches high, and the fire-box eight inches over and eight inches deep, will be amply sufficient. For a house forty feet long by twelve, one of two feet ten inches in diameter and three feet ten inches high, the fire-box ten inches over and ten inches

deep, will also answer well. The stove should be placed in the centre of the house, within a foot or eighteen inches of the back wall, and the horizontal pipe* go at once into a chimney outside, or, what is better, the chimney may be built inside, and carried out of the back wall, just under the glass. By this method no heat is lost. If it be thought necessary to have the feeding-door and draught-door outside, the draught-pipe must be reversed. I, however, prefer the doors inside, for the cold damp air of the house, floating near the ground floor, is sucked in and heated. No inconvenience is experienced from dust, as every morning, before the stove is cleaned out, a pint or so of water is poured in at the feeding-door, so as to saturate the ashes before they are drawn out. Coke from the gas-works is the only proper fuel to use. These stoves should be built with 4-inch brickwork and mortar, the fire-boxes with fire-bricks and fire-clay; and they should not be

THE ARNOTT'S STOVE BOILER.

FIG. 13.



A, iron plate; B, flow-pipe; C, return-pipe; D, door over the boiler; E, feeding-door; G, flow-pipe; H, return-pipe.†

* These stoves will not burn well with a long horizontal draught or flue: three feet must be the extreme length.

† The flow and return-pipes were originally 2-inch; they are now made 3 and 4-inch, and are found to do better.

used till two or three weeks after building, or the brick-work is apt to crack. I find nothing like iron for the roof or top of the stove, as Welsh tiles are apt to crack. A plate of cast-iron, nearly three-quarters of an inch thick, is necessary. On this a shallow pan, two inches deep, two feet square, of galvanized iron, filled with water, will always keep up a genial moisture in the house.

[We have given entire this description of Arnott's Stove, but the usual modes employed in America will prove equally efficacious.—Ed. Hort.]

The above, figured in the "Gardener's Chronicle" for May 12th, 1849, the blocks of which have been kindly lent to me by the editor, is perhaps the most economical and efficient hot-water apparatus ever introduced; it is merely a boiler placed over the fire-box of an Arnott's stove, which does its duty most admirably, at a less cost for fitting up and fuel than any boiler I have yet seen in operation.

I have now six in full work. They have been hitherto cast of three sizes—14-inch, 16-inch, and 18-inch. One of fourteen inches (fourteen inches square), which holds just eight quarts of water, is now heating an orchard house forty feet by twelve,—it does this well, at a very small cost for fuel—coke; another 16-inch boiler heats two propagating pits with gutters, each sixty feet long by six feet, also most efficiently; another heats also a propagating pit sixty feet long by six feet. These two last-mentioned boilers have superseded two of those ribbed monstrosities which cost four times the amount to "set," and devoured four times the quantity of fuel required by the above very simple form of boiler. When used for heating houses, the feeding and draught-doors may be outside, although I do not adopt this plan: but the stove should be, if possible, inside, as the dry gentle heat of the stove, with the moist heat from tanks or gutters, forms a perfect combination. These boilers are made by Mr. Hughes, the Iron Foundry, Bishop's Stortford, at a charge of from 30s. to 35s. each. A good self-taught engineer is William Vale, of Sawbridgeworth: he has had some experience in building Arnott stoves and fitting boilers to them in small forcing orchard houses.

A SELECT LIST OF FRUITS ADAPTED FOR ORCHARD-HOUSE CULTURE;

Placed in the order of their ripening. The sorts marked thus,* may be selected by those requiring only a few trees.

Apricots.

Red Masculine.
Musch Musch.
Large Early.
*St. Ambroise.
*Kaisha.
Blenheim.
*Royal.
*Peach.

*Early Grosse Mignonne. Early Prolific.

*Précoce de Savoie. St. Etienne.

Pêche Abec. *De Montfort.

Grosse Mignonne. Denniston's Superb.

*Noblesse. *Mamelonnée.

*Royal George. *Green Gage.

Reine des Vergers. *Jefferson.

Barrington. *Purple Gage.

Chancellor. Woolston Black Gage.

*Walburton Admirable. *Reine Claude de Bavay.

Late Admirable. Guthrie's Late Green.

*Bourdine. *Coe's Golden Drop.

Desse Tardive. Ickworth Impératrice.

Dessert Plums.

*Red Nutmeg.
Early Anne.
*Early York.
Acton Scott.

*Early Favorite.

St. Martin's Quetsche.

Coe's Late Red.

*Late Black Orleans.

Kitchen Plums.

*Early Orleans.
 *Kirke's.
 *Victoria.
 *Prince Englebert.
 Pond's Seedling.
 White Magnum Bonum.
 Diamond.
 *Autumn Compote.
 *Belle de Septembre.

Cherries.

*Belle d'Orléans.
 Early Purple Guigne.
 *Knight's Early Black.
 *May Duke.
 *Archduke.
 Royal Duke.
 Belle de Choisy.
 Black Eagle.
 *Elton.
 Bigarreau Napoléon.
 Bigarreau.
 *Reine Hortense.
 *Florence.
 *Coe's Late Carnation.
 *Late Duke.
 Belle Magnifique.
 Morello.

Figs.

Early Violet.
 White Marseilles.
 Brown Turkey.
 White Ischia (for forcing).

Pears.

*Doyenné d'Été.

Citron des Carmes.

*Jargonelle.
 Pius the Ninth.
 Seckle.
 *Colmar d'Été.
 *Louise Bonne.
 Gansel's Bergamot.
 *Beurré Superfin.
 Beurré Rouge.
 Crassane.
 Doyenné Gris.
 *Marie Louise.
 *Thompson's.
 Beurré Clairgeau.
 Van Mons (Léon le Clerc.)
 *Glou Morceau.
 Beurré d'Aremberg.
 Passe Colmar.
 *Winter Nelis.
 Easter Beurré.
 Beurré de Rance.
 *Josephine de Malines.
 *Bergamotte d'Esperen.
 *Prince Albert.

Grapes (for the Common Orchard House).

*Early Malingre.
 *Prolific Sweetwater.
 Grove End Sweetwater.
 *Muscat St. Laurent.
 Royal Muscadine.
 *White Romain.
 Purple Fontainebleau.
 *Esperione.
 *Black Hamburgh.
 Chaptal.

Cambridge Botanic Garden.

*Muscat de Sarbelle.

Grapes (for the Forcing Orchard House).

Chasselas Musquée.
 *Purple Constantia.
 *White Frontignan.
 *Muscat of Alexandria.

Apples.

Calville Blanche.
 Newtown Pippin.
 Northern Spy.
 Reinette de Canada.
 Melon Apple.

Apples for the North.

*White Juneating.
 *Irish Peach Apple.
 *Cox's Orange Pippin.
 *Ribstone Pippin.
 *Golden Pippin.
 Golden Reinette.
 *Van Mons Reinette.
 Coe's Golden Drop.
 *Sturmer Pippin.

Strawberries.

*Keen's Seedling.
 *Seedling Eliza.
 Sir Harry.
 *Carolina Superba.
 Ingram's Prince of Wales.
 *British Queen.

THE END.



PICEA EXCELSA VAR. HAGEMANNIANA.

PICEA EXCELSA VAR. HAGEMANNIANA.

THIS variety of *P. excelsa*, which is quite unique in its appearance, and which by its singular habit can only be somewhat related to *Picea excelsa* var. *viminalis*, was discovered in the summer of 1856, in an extensive forest, where it came up from seed accidentally.

Its very singular, nearly branchless limbs, have some similarity to *Araucaria imbricata*. It was named after Mr. Hageman, under whose care this forest is; and I planted it in my nursery, where I succeeded in propagating it extensively.

The same day and in the same forest, I was fortunate enough to discover another variety of *Picea excelsa*, not less interesting but of a far different character, and which will no doubt prove a great acquisition to our ever-green trees, as it has the mild, soft character of a weeping tree. I named this variety *Picea excelsa*, or *Hartweggii*; it has a graceful appearance, having distinct layers hanging down semi-globularly.—*E. Topf, Erfurt; in Deutsches Magazin, Stuttgart.*

FROSTS AND FRUITS.—THE FRANKLIN GRAPE, &C.

BY A. HUIDEKOPER, MEADVILLE, PENN.

UP to the opening of the present month, (June,) Western Pennsylvania presented a scene of almost unrivalled luxuriance and beauty. The few cold days in January, which proved so injurious to many of the *Arbor Vitæ* and Norway Spruce trees in New England, had passed over this region without leaving any mark whatever. Trees and shrubbery of all kinds had never hybernated with more perfect freedom from injury. Never have we had a greater profusion of blossoms, a better show of fruit, or a more encouraging prospect of superabundant crops in all the departments of agricultural economy;—even dwarf pear-trees made a fair attempt to retrieve their sullied reputation, and the pomologist looked forward to a kind of horticultural millennium, when he should be permitted to test his new varieties of fruit and draw a comparison of their merits. But the fatal night of the 4th arrived, and a thousand golden anticipations were in a few short hours

“Nipp'd by an untimely frost.”

As the sun obtained power on the morning of the 5th, the whole air became fragrant with the sweetness of the wilting vegetation. In abject humility for having been so stiff-necked the night before, the ascetic dock hung its head meekly to the ground; the elders and ferns bewailed their former verdancy in sackcloth and ashes, while the hickories donned a sable mantle of velvet and went into mourning for the loss of their cousins, the butter-nuts. The ash-trees for once were true to their cinereous appellation, while the Tulip Poplars, which botanists have poetically styled the *Liriodendron*, showed no resemblance whatever to a lyre, unless it was perchance a blasted one. The poor locusts died with an air of catholic sanctity, holding bouquets of white flowers in their hands, while the maples endeavored to

braze it out, and treat the matter as a bagatelle ; their coppery tints, however, showed that it was at best but a bogus assumption of indifference.

The dark cloud which rested upon the landscape, found a sympathetic shade on many a human countenance. The farmer made a wry face over his shrivelled fields of wheat ; the pomologist found a melancholy amusement in popping his hollow peaches, which exploded with the slightest compression, while the florist exclaimed with Scotia's bard,

" But our flowers were in flushing
When their blighting was nearest."

After a week of despondency, and minor frosts at intervals, we have now a most healthy and cheering reaction,—copious warm showers have greatly revived the drooping vegetation. The farmer has repaired damages so far as labor could accomplish it ; wheat fields supposed to be fatally injured are beginning to blossom and show symptoms of returning vitality ; while here and there an unscathed orchard has obtained a pleasant notoriety, like the green spots which show themselves amid the Alpine glaciers.

As the half-foundered vessel is sometimes righted up by cutting away the masts and the rigging, so many cultivators have put their pets into better condition by clipping off the wilted leaves and the softened branches preparatory to a renewal of their growth.

Consolation in the shape of flour at ten dollars a barrel, has been freely administered to the most panic-stricken, who are now happily convalescent, and altogether we have a host of agencies and energies at work to render the balance of the season anything but a barren or unfruitful one.

Amid the wreck in the gardens, the peas are blossoming afresh, the currants have partly escaped, and we enjoyed a larger and finer crop of strawberries than I have grown for years. The Hooker and Wilson's Albany, have fruited with me for the first time, and appear to be nearly equal in merit ; the largest berries (about four inches in circumference) were on the first, but the others were nearly as large,—both kinds presenting very strong trusses of fruit. A seedling of Messrs. Ellwanger & Barry, probably the Orange Prolific, has also proven itself in every way satisfactory.

Grapes under glass with me this year are doing very nicely, with the prospect of a very heavy crop. One Hamburg vine alone, presents 250 clusters of fruit. A self-registering thermometer in the grapery in which this vine stands, gave during the frosts the following results : night of June 4th, 29½ ; June 11th, 31½ ; June 12th, 33½. Notwithstanding these low figures, nothing in the grapery, not in contact with the glass, appeared to be injured, except a few leaves of the White Frontignac. I have found this grape on four years' trial very tender, and a miserable bearer ; according to the books it ought to be prolific. Has any one else a similar experience ? I notice that the fruit upon the higher portions of all the vines is frequently quite in advance of that on the lower branches ; the explanation of this is, I take it, the higher temperature of the upper atmosphere in the grapery ; and this is also, I suppose, the solution of what in several manuals is spoken of as a natural tendency of the grape to send its sap to the higher branches. I have never discovered any want of force or strength in the lower branches, and have never had any difficulty in fruiting the vines clear to the border. If a vine on being taken up in the spring is slung in a pendant position, the head being lowest, is kept in the coolest atmosphere, and the lower branches get a good start, but are overtaken by

the top, when it is tied up, which brings the whole vine into uniformity. The upper grapes on some vines which I tied to the trellis this spring, without slinging them at all, had attained to the size of marrowfat peas by the time the lower clusters were out of bloom. The increased temperature above, also frequently shows its effects in the setting of the fruit—the clusters on a Sweetwater vine above, being almost impenetrable to the scissors, while below the fruit will set more irregularly and thinly.

I have growing to the south of my dwelling, a vine of the grape lately spoken of in the *Rural New Yorker*, and in the *Gardeners' Monthly*, as the Franklin. I have some doubts about its *Franklin* origin, and am inclined to believe that it was introduced here without a name from Mr. Adlum's garden, D. C., some thirty years ago.

The vine above referred to, was set out some sixteen years ago, and now measures ten inches in circumference, and covers above and below a porch extending itself for about seventy feet. It probably had half a ton of fruit upon it when injured by the late frost. I notice the dormant buds are already pushing, and it may possibly produce new clusters of fruit. I think this variety a valuable one for northern climates. It has stood, unsheltered, the test of our severest winters, and has never failed to ripen its fruit perfectly. The clusters are small and abundant; the fruit sets irregularly, some bunches being too compact, and others open and uneven. The color is black, with a blue bloom; the skin thin, too thin to enable it to bear much transportation or to keep long. The pulp is free from toughness, and the flavor, without any saccharine qualities, is sweet enough to be agreeable. The fruit stains a little on being eaten, but I have never known those who partake of it to show any other blueness than a temporary discoloration of the lips. It is a popular grape here, and for our northern latitudes is a very reliable one.* Mr. Hobbs, a nurseryman in this county, has produced a seedling from this grape, and exhibited to me last year a sample of the fruit. It resembled the parent vine very closely in its qualities, and the fruit was somewhat larger. If it proves superior on future trials when the vine has grown older, I will speak of it again.

RURAL GOTHIC COTTAGE.

BY G. E. HARVEY, RURAL ARCHITECT AND LANDSCAPE GARDENER, LYNN, MASS.

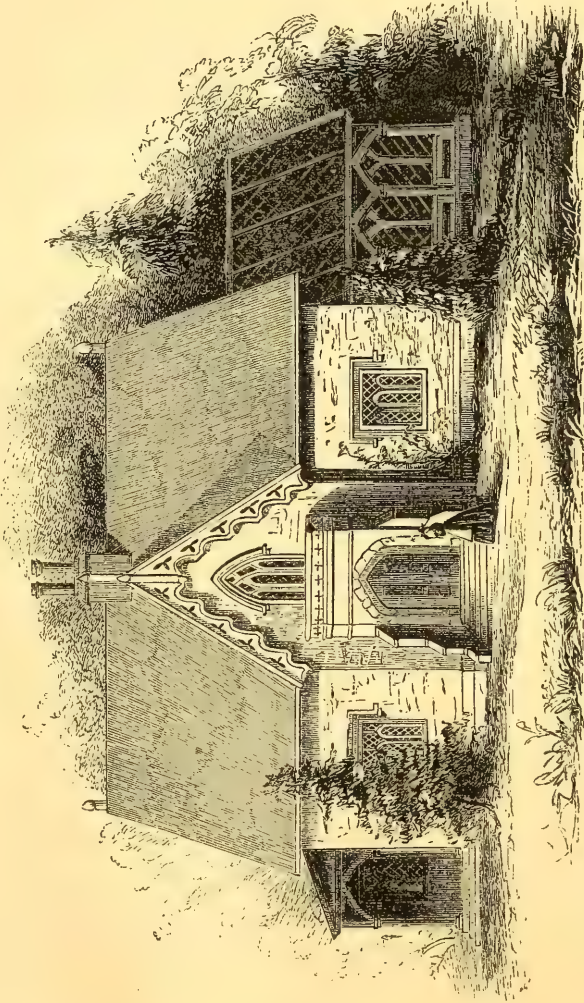
THE accompanying sketches represent a design and plan for a suburban cottage of the rural gothic style.

By glancing at the plan it will be readily seen that it is intended for the home of a gentleman of taste and refinement; whose love for flowers is shown in the addition of a pretty conservatory communicating directly with the parlor; and whose taste for literary pursuits leads him to the setting apart of a room especially adapted to the reception of books—the Library.

The following are the details of the plan-accommodation:

No. 1. Open Porch, 6 feet by 8½.

* I should like to have this grape compared with the Columbia and York Madeira, by some one who has them.



RURAL GOTHIC SUBURBAN COTTAGE.

No. 2. Hall, 13 feet by 18. Directly facing the entrance, glazed sliding doors open into the Library, No. 5, 13 feet by 15.

No. 3 is the Drawing-room, 14 feet by 19. Folding-doors lead from this room into the conservatory, No. 4, 14 feet by 17.

The flower shelves are arranged around the sides, while in the centre may be placed a fountain and basin, or a stand with an aquarium; either would have a very pretty effect seen through the Drawing-room arch.

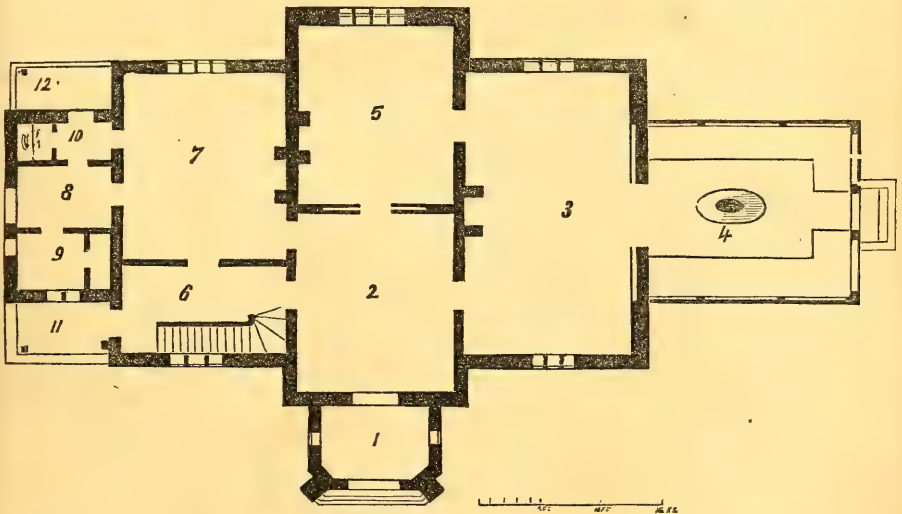
No. 6 is the Staircase Hall, containing stairs to the chambers and cellar; this communicates with the Porch, No. 11.

No. 7 is a Dining-room, 14 feet by 16, connecting with a Waiting-room, No. 8, which is furnished with a Dumb Waiter, rising from the kitchen.

No. 9 is Pantry, 5 feet by 6.

No. 10. Back entry for the private use of the family.

No. 12. Back Porch.



The second floor contains four good-sized chambers, each with a closet or a Dressing-room.

As the partitions are similar to those on the first floor, no separate plan is necessary.

Construction.—This cottage may be built of brick, or what is much better, of rough undressed blue stone, with the trimmings (that is the quoins, window and door latrels, &c.) of freestone, or of granite half-dressed; either will give a sufficient variety of color.

The verge-boards should be cut from two inch and a half plank, and, with the other ornamental details of wood, painted a warm brown or some other neutral color, harmonizing with the stone trimmings.

The chimney tops are a plain pattern of Terra Cotta, 5 feet high, costing at the agent's office in New York about \$5 25 each. (Owing to an error of the draughtsman only one stack of chimneys is shown in the elevation, where there should be two.)

Interior.—The interior finish should be plain and simple in its character, corresponding with the general style of the exterior. For the wood-work white pine oiled or stained would be very appropriate, while the walls may be covered with some neat pattern of paper, or, simpler still, the plastering may be colored a light, lively tint.

Roof should project three feet.

Cost.—In New England this cottage built thoroughly in the above manner would cost about \$3,800, including Greenhouse.

ENGLISH STRAWBERRIES *versus* NATIVES.

IN the April number of the present volume, Mr. Saul, in commenting upon my article in the January number headed "English Strawberries *versus* Natives," starts out by asking the question "Would not good culture *versus* bad be more appropriate?" I may be somewhat dull of comprehension, but I certainly cannot see the slightest similarity between the two, unless Mr. Saul is under the impression that the proper cultivation of each is to trench and manure the ground at a cost of one or two hundred dollars an acre for the foreign varieties, while to take a crop of grass off the ground in the fall and burn it over in the spring is all that is necessary for the natives; this is the inference to be drawn from both Mr. Saul's articles upon strawberries. Now, I would call it cultivating the one upon the "high pressure" principle, while for the other it is no cultivation at all.

I stated in my article "To make any fruit profitable for market there are several things requisite; fine flavor, good size and appearance, hardness, regular and good crops, with the *least labor*,—and the nearest we can have all these qualities combined in one fruit the more profitable it is." I will take up the different points in the order Mr. Saul has taken them.

I am surprised to see Mr. Saul places the Alice Maud among those varieties of superior flavor. No good judge would call it a high-flavored fruit; this is admitted even by the cultivators of it; as for the other varieties named by Mr. Saul, I can assure him I can produce five persons who will decide in favor of Hovey's Seedling, Prince's Magnate, or Bayne's Favorite, where he can get one person to decide in favor of the varieties he has named. As to the pomologists Mr. Saul refers to, I would first wish to know whether they reside on this or the other side of the Atlantic. A fruit may be of "exquisite flavor" in the cloudy atmosphere of London, but it might be worthless in the neighborhood of Washington.

Next comes size. Mr. Saul says in the neighborhood of *London* "British Queens are frequently shown six inches in circumference;" did Mr. Saul ever see a crop of British Queens grown to that size in the neighborhood of *Washington*? He must surely know that every attempt to cultivate them here has met with failure; like their namesakes, they cannot flourish so near the Capital of this great republican nation. The Magnum Bonums referred to by Mr. Saul, raised by Mr. Lambert in 1857, were very large; indeed, might have been called of mammoth proportions; at the time they created quite an excitement in the horticultural circles around Washington, and Mr. Lambert could have sold the plants readily at ten dollars per hun-

dred ; but where was the *Magnum Bonum* in 1858 ? and where was it this year ? Like many of its predecessors, it shone brilliantly in the horticultural horizon for a season, then sank into oblivion, never to rise again. I have taken the trouble to learn how Mr. Lambert raised those berries. He had a bed which was as rich as it could be made ; besides this they were mulched several inches deep with tan, and watered almost every evening, from the time the fruit set until it was ripe. To use the language of Mr. Slater, they were "nursed to death." Under such treatment they have been a failure two seasons out of three ; besides, would any sane man attempt to raise strawberries by the acre profitably in this country with such cultivation ? Yet Mr. Saul brings up the *Magnum Bonum* as evidence in favor of foreign strawberries.

The *Victoria* with extraordinary cultivation is of large size ; and so is an overgrown turnip, there being about as much solidity in the one as there is in the other. As for color, Mr. Saul and I differ as to what is a bright red ; surely the dull greenish red of the *Alice Maud*, or pale color of the *Victoria*, giving it the appearance of being green when fully ripe, cannot be compared to the rich bright scarlet of *Hovey's* and other native strawberries.

Mr. Saul's own admissions prove that foreign strawberries are not as hardy as our natives. He says, in speaking of what he calls the "least labor system," which means grass and strawberries together,—“the strawberry patch to be mown soon after the fruit is gathered, and in place of a nice mulching of rotten manure in the fall the grass has grown and become matted through the plants, to prevent their freezing out during the winter. In the spring they are cleared out expeditiously by burning the patch over, and the plants are ready to bear again.” Truly does Mr. Saul say, “under such treatment the foreign varieties pertinaciously refuse to grow ;” he might safely have said there would not be a vestige of a plant left ; yet the natives bear a crop of fruit. Again Mr. Saul says, “not only should the ground be trenched and highly manured, but the soil should be an adhesive loam approaching to clay,”—or in other words, *they must have a soil of a peculiar texture* or they won't succeed. The natives do well upon any soil which will produce a crop of wheat or corn. If Mr. Saul recommends a cherry, or a pear, or a rose, is not hardness one of the principal requisites ? aye, would he not sacrifice some other qualities to a certain extent, to hardness ? The farmer plants corn that fires the least ; he sows the wheat that is least subject to smut, and plants such potatoes as are least affected by the rot ; and why will not the same rule hold good for strawberries ?

Next in order comes the "*least labor*,"—the clause Mr. Saul seems not to understand. I will state what I call "*least labor*." If it costs Mr. Saul \$150 to prepare a piece of land, which I will prepare for \$50, and it costs Mr. Saul \$50 more for mulching, &c, in the fall, and I raise the same amount of fruit for which I get the same prices,—or in other words, if the income is the same, I have the advantage of \$150 dollars in the outlay. Mr. Saul would trench with the spade, and manure heavily ; (this last is not by any means a cheap article in Washington). I will break up the the land with the plow, and subsoil, and if the land is of pretty good quality, put on 300 lbs. of guano to the acre, *and keep the plants clear of grass by cultivating them during the summer*. I can assure Mr. Saul the next spring I can show as fine fruit and as much of it, which will bring as good prices in the market as Mr. Saul can produce upon his highly-prepared land and foreign varie-

ties :—now these are not merely assertions, but facts, which are yearly proved around Washington city.

Mr. Saul asks if I ever saw Mr. Slater, or Mr. Cammack, sell Alice Maud at twenty cents per quart. I have seen the first-named gentlemen sell them for that and less. Mr. Cammack, I believe, does not raise the Alice Maud. I am also cognizant that Mr. Slater frequently gets a dollar per quart for his first berries. But is Mr. Saul aware that Dr. Bayne gets at the same time as much and even more for his strawberries? and has Mr. Saul ever known Dr. Bayne's strawberries to sell for less than Mr. Slater's, or Mr. Cammack's? Their stands in the market are contiguous, which affords a fine opportunity to compare prices; and does not Mr. Cammack get as much for his Hovey's Seedlings as he does for his other varieties? if not, why is it he cultivates them.

I am surprised that Mr. Saul should speak so lightly of the experience of Dr. Bayne, a gentleman who has devoted a lifetime to the cultivation of fruit, and who might properly be called the pioneer of horticulture, not only around Washington, but of southern Maryland. Dr. Bayne is not merely a theorist, as Mr. Saul would infer, but he puts theory to practice, the only true way to come to correct conclusions upon any subject. In reference to Dr. Bayne's failure with foreign strawberries, I will merely state that his farm contains some three hundred acres, with almost every variety of soil, and with deep trenching, high manuring, and thorough after cultivation; upon soils of almost every grade, from a stiff clay to an alluvial soil two or three feet deep; and if they would not succeed under these circumstances, is it not natural to conclude they at least won't suit our climate *unless they have a very peculiar soil to luxuriate in.*

Mr. Saul wishes to know "Who are nearly every strawberry grower in the neighborhood of Washington city;" not only Dr. Bayne and myself, as Mr. Saul would infer, but numbers of others, who, like Mr. Saul's friends, are hard-fisted tillers of the soil, whose object is to turn every acre of their land to the best advantage; men who have tried foreign varieties and have thrown them aside as unprofitable. A few of them I will name, and if Mr. Saul takes the trouble to make inquiries he will find the statements I make are correct. Mr. Douglas, near the Eastern Branch, cultivates several acres in strawberries, principally Hovey's Seedling; he raises heavy crops of fine fruit which he does not even find necessary to send to market, as his fruit is engaged before it is ripe. Mr. Douglas tells me he has cultivated Victoria, Kitley's Goliath, and nearly all the English varieties which have come to us with high-sounding names, and out of the whole he considers none of them worth having except the Alice Maud, and that cannot always be relied on. Mr. Bell, near Bladensburg, cultivates half an acre of Hovey's Seedling; he picked this season 1500 quarts. The Messrs. Febrey, of Alexandria co., Va., cultivate about seven acres; they have just closed up their crop for the season, having picked 20,000 quarts. Besides the gentlemen named, there are many others who raise heavy crops of strawberries, which, in point of size and appearance, compare favorably with any strawberries in the market, and sell for as good prices; yet they were raised for less than half the expense and labor which Mr. Saul says is necessary to raise a crop of English strawberries.

As to my making use of Mr. Cammack's name, I drew my conclusions from a conversation which several gentlemen had in the horticultural fair

room a year ago. Dr. Bayne remarked that he would give \$100 for a dozen plants of a better strawberry than Hovey's Seedling, to which Mr. Cammack replied, "I will give \$200;" that, and the fact that Mr. Cammack cultivates Hovey's Seedling extensively, more so, I believe, than all other varieties together, induced me to make the assertion which I did. As to my not being personally acquainted with Mr. Cammack, it may be ignorance in me, but it certainly is the first I was aware of its being a breach of etiquette to make use of a gentleman's name in the general way in which I made use of Mr. Cammack's. It certainly was not my intention to misrepresent him.

A few words in reference to the Washington Horticultural Society. Mr. Saul is aware that there is at least one week's difference in the ripening of fruit between the northern and southern sides of the city. Now, had the exhibition a year ago been held at the time first named, I am confident the prizes would have been reversed; *but the exhibition was postponed one week*, which brought it in the very nick of time for Mr. Saul, Mr. Cammack, and other gentlemen living on that side of the city, to display their strawberries to the best advantage. And how were the prizes awarded? Mr. Cammack took the first prize, and Dr. Bayne (although laboring under the disadvantage of its being a week too late for him) took the second prize, over all other competitors, including Mr. Saul himself.

Mr. Saul wishes to know why it is that I have never appeared in competition at any of the horticultural exhibitions. It has been from the fact that until lately I have been so situated I could not pay that attention to strawberries that I would have wished. But Mr. Saul has frequently exhibited his strawberries, and I have yet to hear of his premiums.

I do not consider it a true criterion that any fruit will be profitable for market purposes, merely from the fact that it does well for one or even two seasons under the careful nursing of an amateur gardener. I will again state that with equal cultivation, our leading American strawberries will throw every foreign variety far in the background as a profitable market fruit; and if I am not mistaken such is the opinion of nearly every strawberry-grower in the neighborhood of Washington city, with the exception of a few, who, like Mr. Saul, are "joined to their idols."

The following varieties can be relied on in this vicinity as profitable for market: Hovey's Seedling, Prince's Scarlet, Magnate, McAvoy's Superior, and Bayne's Favorite; the last is a strawberry cultivated for some years by Dr. Bayne, which only requires to be generally known to become popular. Wilson's Albany has done remarkably well this season wherever it has been tried, but will require another season's trial to establish its reputation.

SCIENCE FOR COMMON SCHOOLS.

ONE reason why Horticulture and the kindred sciences have not, heretofore, been taught in our common schools, may lie in the fact that we have not had suitable text books to favor the object. But times are changing,—wise men are growing wiser, and are coming to the conclusion that knowledge does not admit of monopoly, but her store-house is open to all who will enter in to secure its treasures. It is, therefore, no longer thought important, that science should be locked up in technicalities, that it requires

years of the best portion of one's life to understand. No, our wiser and better men now study simplicity, and bring their knowledge within the comprehension of all: we have this fact happily illustrated in a recent work on Botany, by Prof. Gray of Cambridge, who, as authority in the science, is second to no one. Premising that all intelligent cultivators will admit that the knowledge of plants is a *very important* knowledge to every cultivator of the soil, and a very pleasant study for the minds of the old as well as the young, his "How plants grow" probably contains more facts pleasantly narrated on the subject, than any other work extant, and they are just such facts as will tend to make the labors of plant growers pleasant and successful. It is just the book for the common school, or the common reader. His "Lessons in Botany" is written in the same understandable style, and is followed by the structural and systematic Botany, and this again by his Manual:—the whole making a beautiful series on a highly useful and attractive science, adapted to the capacities of all. We shall hope for its introduction into farmers' families and common schools as fast as the publishers can furnish copies.

Geology and its kindred science Mineralogy have very much to do with terra culture, besides furnishing rich pasturage to the mind while engaged in cultural pursuits. In our country, it is comparatively a new science, scarcely known in our colleges a half century ago. Its growth, however, from the healthful aliment that has been given it, has been rapid in extent, and beautiful in symmetry.

Elementary Geology, by Prof. Hitchcock, is a beautifully illustrated work, admirably adapted to the capacities of the young, and probably contains more geologic facts, condensed from the author's personal observation, and collected from the best observers in all countries, than any other work extant,—written in so attractive a style, that when we take up the book we don't know how to leave it. It is well adapted to the family and school-room.

In the introduction of foreign plants, great losses have no doubt arisen in consequence of the ignorance of the cultivator of the geological formations and physical features generally, of the localities from which they are brought. We have long wished to see some work on this subject, wherein the young might gain such information, and have at last been gratified to a large extent by the appearance of Fitch's Physical Geography,—which, for a work of its size has very much to commend it as a general school-book. All students, in descriptive geography, will see the importance of connecting the physical, and for young horticulturists it contains a host of facts of a practical nature. The above works are all got up in good style, at cheap prices, and may be procured by giving an order to any bookseller; we wish they were universally known instead of the foolish literature that is introduced, one hardly knows by what processes, into most families in the country.

S.



Horticultural

REVIEW.

American Weeds and Useful Plants; being a second and illustrated edition of *Agricultural Botany*. By WILLIAM DARLINGTON, M. D. Revised, with additions by GEORGE THURBER, Professor of Materia Medica and Botany, &c., in the New York College of Pharmacy. New York: A. O. Moore & Co. 1859.

This excellent reprint of a valuable book has laid too long on our table without notice; but other topics have been absorbing, and we now turn to it with the desire of impressing its importance upon our readers especially. Weeds require attention as much almost as our valuable crops, and it is something to know what they are and how to get rid of them. Some of our best plants may be weeds where they grow naturally, but we call all by the name which interfere with wholesome cultivation. In that thoughtful book entitled "*Companions of My Solitude*," by the author of "*Friends in Council*," the writer gives a picture of a puzzled little girl, who came running to his knees and held up a straggling and pretty weed. Then with great earnestness, and as if fresh from some controversy on the subject, she exclaimed,

"Is this a weed, Papa? is this a weed?"

"Yes, a weed!" he replied.

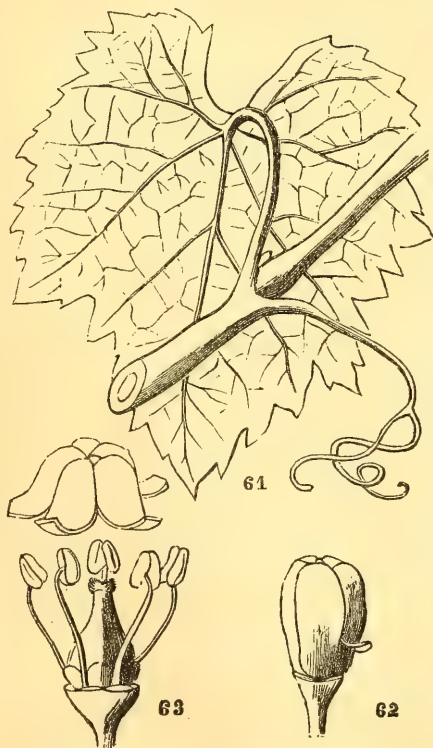
With a look of disappointment she moved to the one she loved best, and asking the same question, received the same answer.

"But it has flowers," the child replied.

"That does not signify; it is a weed," was the inexorable answer; but, notwithstanding, the little girl asks Nicholas, the gardener, to plant it in her plot, which children walk about upon a good deal, and put branches of trees in, and grown-up flowers, and then examine the roots, (a system as encouraging as other systems of education that could be named), and which they call their gardens!"

Dr. Darlington, long since, was anxious to call the attention of farmers and gardeners to the subject of weeds, about which so much neglect is too often apparent, and on his excellent frame-work Professor Thurber has erected a complete superstructure. This is a great advance on the original work because it is greatly enlarged, and it is capitally illustrated, an advantage which Mr. Moore, the publisher, is well qualified to direct, and if necessary, himself to perform, as well as to know when the performance is properly done.

To use no more words, however, on the subject, beyond an entire commendation of both matter and manner, we proceed to copy a few of the illustrations, in the belief that in doing so, we recommend the book to every cultivator. Our first picture will be the common Wild Grape, which if not *a weed*, is at least a cumberer of the ground, now that we have so many fine native varieties.



Common Fox Grape (*Vitis Labrusca*).

Summer Vitis. Little Grape. Common Wild Grape.

Stem 20-40 and sometimes 60 feet or more in length. *Leaves* 4-8 inches long, often palmately lobed with rounded sinuses—the younger ones with a loose cobweb-like russet pubescence beneath, which becomes coarser and more hirsute with age, and sometimes nearly disappears. *Berries* globose, small, (generally about one-fourth of an inch in diameter,) deep blue or bluish black when mature, and covered with a fine glaucous powder—the skin thinish, and the flavor (especially after a little frost) a sprightly agreeable acid.

Rich woodlands and thickets: Connecticut to Florida. *Fl.* June. *Fr.* October.

Obs. This is the tallest climber of all our Grape-vines, in Pennsylvania; and I have seen an old vine, of this species, 8-10 inches in diameter, at base. The fruit varies in size and quality,—the best specimens being well worthy of culture. I have cultivated a native of this vicinity, in which the fruit often equals that of the "English Grape" (or Miller's Burgundy), in size; and although somewhat harshly acid, it abounds in a rich purple juice, at maturity,—and makes a fine preserve for pastry.

We now come to one of the greatest nuisances the farmer has to encounter:

17. LEUCANTHEMUM, *Tournef.* OX-EYE DAISY.

[Greek, *Leukos*, white, and *Anthemion*, a flower; in reference to its white rays.]

Heads many-flowered; *rays* pistillate, numerous. *Involucre* spreading, broad and nearly flat,—the *scales* imbricated, with scarious margins. *Receptacle* flat or somewhat convex, naked. *Tube* of the *disk-florets* fleshy, obcompressed, and slightly 2-winged. *Akenes* of the disk and ray similar, subterete, striate, destitute of pappus. *Perennial herbs*. *Leaves* alternate, mostly pinnatifid or incised-dentate. *Heads* rather large, solitary and terminal.



White-weed or Ox-eye Daisy (*Leucanthemum vulgare*.)

moreover, exceedingly difficult to get rid of, when once fully established; so that one negligent sloven may be the source of a grievous annoyance to a whole community. I have understood that annual ploughing and cropping for a few years, is the most effectual remedy for the evil; but then the fence-rows and neighboring fields must be well watched, to prevent the formation and introduction of fresh seed. The Corn Marigold (*Chrysanthemum segetum*, L., a kindred plant)—which is said to be such a pest to the agriculture of Europe—does not appear to have found its way, as yet, to the United States.

The "Divining Rod" has still its believers among us. Hear how they are treated by Dr. D. under the head of *Corylus Avellana*, L.

1. C. AVELLA'NA, L. Leaves orbicular cordate, acuminate; stipules ovate-oblong, obtuse; involucre about the length of the fruit.

AVELLAN CORYLUS. Filbert. Hazle-nut.

Stem 6-10 feet high, branching from the base. *Leaves* 3-5 inches long, often obovate-cordate, doubly serrate; *petioles* $\frac{1}{4}$ - $\frac{3}{4}$ of an inch in length. *Pistillate flowers* few in scaly clusters,—the *scales* (or *bracts*) enlarging, uniting and forming the *involucre*s. *Stigmas* purple. *Nuts* rather large.

Yards, &c. Native of Asia Minor. *Fl.* March. *Fr.* Sept.

Obs. The Filbert, or Hazle-nut of the old world is now becoming known among us,—and not unfrequently cultivated. "The bushes were originally imported into Italy from Pontus, and (the fruit) known among the Romans by the appellation of *Nux Pontica*,—which, in the progress of time was changed into that of *Nux Avellana*; from the place (Avella, near Naples)

1. *L. vulgare*, Lam. Stem erect, somewhat branched; leaves laciniately incised or pinnatifid-dentate,—the cauline ones sessile and somewhat clasping—the radical ones obovate-spatulate, petiolate; scales of the involucre with narrow russet-brown margins.

COMMON LEUCANTHEMUM. Daisy. Ox-eye Daisy. White-weed.

Fr. L'oeil de Beuf. *Germ.* Die Wucherblume. *Span.* Margarita mayor.

Stem 1 to near 2 feet high, erect or subdecumbent, angular and striate, somewhat hairy, simple or sparingly branched, but often several from the same root. *Leaves* 1-2 inches long, the upper stem-leaves oblong, the lower ones cuneate-spatulate, and the radical ones obovate or orbicular-spatulate. *Heads* broad; *rays* very white—in length about equal to the diameter of the disk; *disk-florets* yellow. *Akenes* subterete, ribbed, smooth, dark purple between the ribs, destitute of pappus. *Receptacle* slightly convex, dotted.

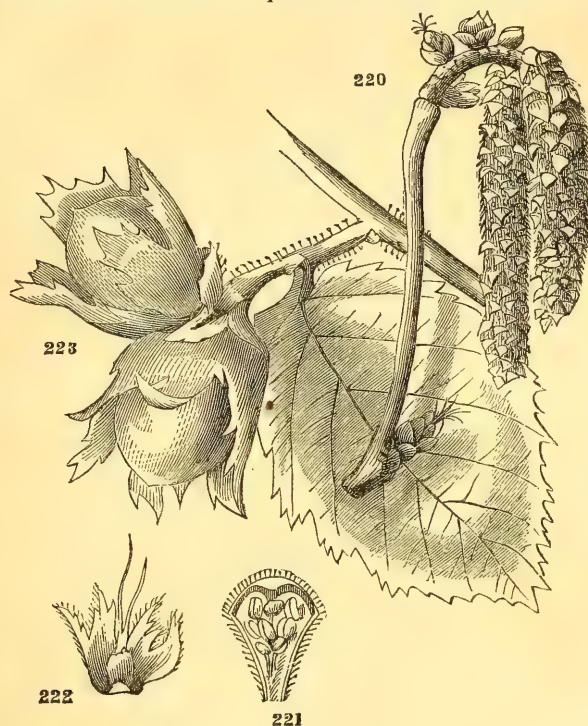
Fields and meadows, more or less throughout the United States; introduced. Native of Europe. *Fl.* June-Aug. *Fr.* July-September.

Obs. This vile intruder is becoming a great nuisance in our country. In some districts the careless, slovenly farmers have permitted it to get almost exclusive possession of their pasture fields,—rendering them quite white when the plant is in bloom. Cows will occasionally crop a portion of the weed in our pastures,—and I have heard it alleged that it contributes to the making of good butter: but my own observations induce me to regard it as utterly worthless. It is propagated rapidly, and is,

where they had been most successfully propagated." The young forked twigs of this shrub constitute the celebrated divining rod with which certain imposters beyond the Atlantic pretend to discover the localities of precious metals and subterranean fountains. The imposture and

the credulity on which it operated, have both reached our shores; but the Filbert not being indigenous here, a capital substitute was discovered in the Witch Hazel (*Hamamelis*)! The twigs of Peach trees also, have been found to answer the purpose nearly as well as the Witch Hazel; and thus the occult sciences of ore-finding and water-smelling, have been enabled, in some degree—even in this "progressive" age—to keep pace with the sublime mysteries of Clairvoyance, and Spiritual Rappings, as well as with the lucrative manufacture of Panaceas, and Indian Specifics. It is indeed both humiliating and discouraging to contemplate the facility with which a large portion of mankind can be made the dupes of such miserable trumpery.

The Canada Thistle, and all our great cumberers and nuisances, are treated in this lucid manner; many more than we have inserted we had marked as of interest, but space fails us. We



Filbert or Hazel-nut (*Corylus Avellana*).

have given enough to designate its great value to the public, and as a book of reference it will be always useful to have at hand.

SMEARING TREES.—It is not clear to every one whether smearing trees with pitch or grease in order to keep off insects is mischievous or not; some people asserting that such applications are highly dangerous, others that they are highly beneficial. Considering how important it is to settle this point, Mr. Jaeger has recorded in the *Monatsbericht für Pomologie* the result of some experiments that he has tried.

A mixture of tar and whale oil was applied to some fruit trees six years old in perfect health, in the spring before they were quite in leaf. 1. A tree, the trunk of which was covered all over by the mixture, pushed feebly; when the tar became firm the bark burst in various places, and began to bleed there. By the autumn the tree was well nigh dead. 2. When the trees had their stems covered only one-third or half-way up, they took very little harm, pushing freely the year afterwards. 3. When only a ring a hand's breadth wide was tarred they took no harm at all.—*Botanical Magazine*.

EDITOR'S TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

USEFUL TREES FOR SHADE AND ORNAMENT.—It has been suggested that in the efforts that have been made to ornament the more costly country seats of the United States, the landscape gardener has lost sight of the largest class of planters; that a thousand country gardeners cannot afford costly evergreens or rare foreign plants, and in fact could not get them if they wished to do so. Again, it is urged with a show of truth, that very many occupy so contracted a space of ground that to get the full advantage from it, their trees must yield something more than ornament. Can we, then, plant our rural homes with useful and at the same time ornamental trees? Shall we compromise a little, and not have it for a principle that nobody of taste shall admit a productive tree on his lawn?

The severe rules of the true artist, may, we think, allow of such use in very numerous cases, and we like the suggestions of a valued correspondent, Col. D. S. Dewey, whose communication we insert below. At the moment of writing, the following trees come to memory, and we may add that the enjoyments of a rustic home may be greatly enhanced by considering the *utile* with the *dulce* in this matter.

In a lawn not many miles from the city of New York, where we are sure there has been as much enjoyment and as much true happiness as in the most lordly mansion of this earth, there stand two Siberian Crab Apple-trees, one in front of the parlor, and one before the dining-room window. The first sight of these trees in spring, clothed all over, as they universally are, with fragrant blossoms and the promise of useful fruit, may give as much gratification, and does so, as the lordly owner of a forty-acre lawn receives from his *Magnolia conspicua*, which though a handsome tree in all its stages, yields nothing for sustenance. The flowering is followed almost always by a most bountiful crop of beautiful fruit—coral in color, and affording a useful conserve. The lady who presides over the homestead, supplies her own closets with abundance of winter sweets, and sends to her neighbors and tenants bushels of the beautiful fruit. All may not be fond of this preserve, but many are so, and if the fruit were to be thrown to the swine, its beauty during months of growth is sufficient to recommend it. We are sure these trees are more valuable than many an evergreen struggling through its winter difficulties. No disparagement, however, to ornamental trees, exclusively so-called, is designed; they will maintain their position.

We have in the present number made a few hasty observations on avenues, a subject deserving attention. The Hickory-nut is there suggested. As an ornamental and productive tree, what could be better? Its shape, foliage, and curious bark, its stately *American* character, and

its produce, surely recommend it. Slowness of growth should be no obstacle, for if our ancestors had never planted, where would have been their posterity?

Some of our friends have adopted the only tropical-looking fruit we possess; the Papaw, *Anona triloba*, is one of the most beautiful small trees we have in the Middle States. Its flower, quite unique and beautiful, is succeeded by a fruit of rare merit, more resembling the coveted Banana, perhaps, than any other. At Bartram's garden, near Philadelphia, bushels are produced. The leaf is singularly handsome, and the stem of the tree has few rivals for beauty.

The native Walnut, and the Chestnut, must not be forgotten. Who that has gathered their fruits in youth but delights to reproduce the pleasures of childhood, and go to work at "pulling" and "opening" with renewed gusto!

The farm, where most of our own tastes were fostered, was situated within the moderate distance of seventeen miles from Philadelphia. It had been the residence of a colonial governor, whose house still stands, with its gable end bearing the marks, in colored bricks, 1695. The governor took such fruit-trees as he could then procure, and began with a double avenue, near the house, of native Walnut-trees, which in our time annually supplied wagon loads of fine nuts, and also afforded shade and play-ground to successive generations of happy children, who doubtless thanked the planter.

But the great feature was a continuation of this avenue for quite half a mile, planted with a double row of Black Heart and Honey cherries, that attained a great age and commensurate size. For an entire century these celebrated cherry-trees were the resort of a large neighborhood, and were the source also of a stolen supply to the Philadelphia markets. It is true that the hucksters, no less than some otherwise good neighbors, considered them too much in the light of public property, and often "made a day of it" under their huge shadows, or in their forked branches, not unfrequently turning their horses into the adjoining clover-fields—a trespass winked at by the liberal proprietor, whose delight was to see others enjoy themselves, and make a penny from the enormous superfluity. One after another of the double row of trees fell a victim to great age, and not one is now among the living. The farm is no longer *distinguished for anything*. Walnuts, and dried cherries cured so carefully in milk-pans set out in the sun, no longer cheer the winter evenings, for no more fruit-bearing trees have been planted on old "Green Hill."^{*}

Now, it may be annoying to have one's clover-field taxed for other peoples horses, but with modern habits there is no difficulty, where there is abundance, in disposing of the right to pick certain trees, and we know of an instance where from two to four hundred dollars is the annual income of a gentleman, from his cherry-trees alone, that were planted by his father. Is this nothing? Is an avenue of cherry-trees that will pay for an education for two or more children, unworthy of our regard? Think of it—planters of high and low degree.

In Cuba, where the coffee plantations require shade, a great feature is the avenues of fruit-bearing trees, and no part of the beautiful island is more attractive than these long stretching arms of cocoa-nuts, oranges, lemons, grape-fruit, shaddocks, or nut-trees.

But to our correspondent, to whose ideas we give a welcome, and shall be glad of suggestions from others:

"And now, with regard to that temporary hobby of mine, viz.: fruit trees for shade and for decoration. It is a matter which, I think, should be in the hands of amateurs only, for the present. The subject needs no argument;—it is certainly one of *growing* importance;—and many a tree-planter would, doubtless be thankful for such information as would enable him to combine utility with beauty in the adornment of his homestead.

"Those aristocratical beauties called 'ornamental trees and shrubs' are well enough,—in fact, are indispensable,—in their way; but there are thousands of places, and thousands of circum-

* Where we had a favorite seat thirty feet up a Shellbark tree that bore bountifully of nuts; and was also enshrouded to the very top with a productive grape-vine.

stances where *well-ordered* fruit-bearing trees might with propriety usurp their places, without a sacrifice of taste.

"The Black Tartarian cherry, the Belle de Choisy, and the Coe's Transparent, are all handsome-growing; each in its own way of natural habit. The Early Strawberry apple, the Northern Spy, and the Red Astrachan, always grow in good shape, so far as I have observed; and the same may be said of the Tyson, the Onondaga, and the Pinneo pear, (as standards); and the Duchess, and one or two others, as dwarfs,—(when and where dwarfs can be made to flourish.)

"If amateurs will respond to suggestions on this topic, I think that by the time of spring-planting, a respectable list of ornamental fruit trees might be made, which, with further observation with particular reference to this point, may eventually be so extended as to form a distinct class in our nurserymen's catalogues.

"Fortunately, many of our best kinds of fruit-trees,—including the nut-bearing varieties,—are among the handsomest in form, foliage, flower, and fruit. Yours, &c., D. S. D."

CALIFORNIA FARMER.—This excellent paper is again upon our table after an absence of months, owing to being misdirected. It is redolent of fruits and flowers, agriculture, tree-planting, and all that relates to home. We learn from it that strong efforts are constantly being made to introduce the best fruits of all countries; occasionally, too, we glean the fact that the inhabitants are beautifying their dwellings, and enjoying to the full the beauties of nature by which they are so easily surrounded by a little care and culture. It is one of our best parishes, and the editor of the *Farmer* a good vestryman, in whom we recognize a disposition to progress in all that is useful. He discusses the national emblem, which it would be proper to adopt, thus: "To the ladies of the Mount Vernon Association, then, let the trust be committed of selecting the appropriate badge, or emblem of American freedom; and let it emanate from those who have thus nobly saved to our country and the world that holy ground—the resting-place of George Washington!"

"The above is found in the *Horticulturist*, and has been copied into many papers throughout the United States with various suggestions; but of all the 'badges for American freedom,' we have found none yet proposed that seems appropriate to so exalted a theme as *American freedom*!—embracing Human Liberty; Human Progression; Civil, Political, Religious, aye, Mental Freedom! There is but *one tree* under Heaven emblematical of this God-breathed spirit; and that tree, the Oak! It is a native of the British Isles, from whence the May-flower sailed. With the early Pilgrims came the spirit of American freedom, and upon the bleak shores of New England was it planted. That spirit of freedom has spread East, West, North, and South. Its watch-fires light up every hill throughout our blessed land; and over all her hills and mountains the Oak is found; its roots have gone deep into the earth, and its broad and spreading branches offer shelter and shade in storm or sunshine. The Oak then for freedom! Its bright, glossy leaves will endure the burning sun, or bear the winter's cold, better than any other known. The Oak is the most appropriate emblem of our love of liberty. From the Oak are made many of the implements of agriculture and our best machinery—our wagons, carts and carriages roll round upon the Oak, and not a word is *spoke* for liberty but finds its *fellow* near the circle, and all will go to the *hub* in defence of liberty. Give us then a *wreath of Oak leaves*, as the crowning emblem of American liberty! And when the patriot and statesman has done his duty in his country's cause, bind not his brow with the *Poison Ivy*, but grace them with the *Live Oak*! fit emblem of liberty, which is eternal."

(This is excellent, and we shall all be charmed if the ladies of the Mount Vernon Association will decide.—ED.)

THE ISABELLA GRAY ROSE, says the *Gardener's Chronicle*, a fine double yellow variety, about which and against which so much has been said, is beginning to show her true character and to vindicate her claim to stand in the first rank of beauty.

MR. HOWARD DANIELS, landscape gardener, of New York, has been employed many months

in adorning and improving that beautiful watering-place, the White Sulphur Springs, of Virginia, and all accounts agree that he has, as might have been expected, greatly added to attractions that nature has arranged with so much success, and which is, probably, the most resorted to of any public place of the kind in America.

THE ORCHARD HOUSE.—We have some practical remarks for publication next month on the Orchard House in America, by our practical friend "Fox Meadow."

LETTERS ON MODERN AGRICULTURE, by PROFESSOR LIEBIG, edited by John Blyth, M. D., is the title of the new work issued in London. It has not reached our table, and we must be content to take at second-hand a few extracts from English journals:

"Nothing," says the *Gardener's Chronicle*, "can be more just than the following comparison of the plough and the spade, and we trust that cultivators will appreciate it; for it involves some of the greatest of truths, an entire conviction of the importance of which is all that is wanted to terminate the career of an antiquated implement whose merit consists in its ability to perform much bad work in little time.

"If the food of plants in the soil cannot move towards the roots, it is evident that the roots must spread about to look for food.

"A piece of bone weighing about 30,000 milligrammes (one ounce), in a cubic foot of earth, produces no marked effect on its fertility. But if these 30,000 milligrammes of phosphate of lime be uniformly distributed throughout the earth, it will suffice for the nourishment of 120 wheat plants. Ten thousand milligrammes of food, having a surface extent of 100 square millimetres, are within the same given time not more effective than ten milligrammes having the same surface extent. Of two fields with the same amount of food, one may be very fertile and the other equally unfruitful, if the food is more uniformly distributed throughout the former than the latter.

"*The common plough breaks and turns up the soil without mixing it; it only displaces, to a certain extent, the spots on which plants are already grown. But the spade breaks, turns and mixes it thoroughly.*

"As the smallest portions of food cannot of themselves leave the spot in which they are held firmly fixed by the soil, we can understand what immense influence must be exerted on its fertility by its careful mechanical division and thorough intermixture. This is the greatest of all the difficulties which the agriculturist has to overcome.

"Professor Liebig strongly advocates the use of green manures, a system pursued extensively on the continent of Europe.

"The keeping of cattle is necessary for the production of manure; but the production of manure is by no means necessary for the fertilization of corn fields. In the system of the rotation of crops, all that is required is that green crops should be grown, and that their constituent parts be incorporated with the arable surface soil of the field; and it is quite immaterial for the cereals whether the green crops be previously eaten by the cattle and converted into manure or not. If lupines, vetches, clover, turnips, &c., are cut up and ploughed in, in the green state, their action is far more powerful."

The following truth, so little appreciated, is happily put: "The technical part of an industrial pursuit can be learned; principles alone can be taught. To learn the trade of husbandry, the agriculturist must serve an apprenticeship to it; to inform his mind in the principles of the science, he must frequent a school specially devoted to this object. It is impossible to combine the two; the only practicable way is to take them up successively. I formerly conducted at Giessen a school for practical chemistry, analysis, and other branches connected therewith, and thirty years' experience has taught me that nothing is to be gained by the combination of theoretical with practical instruction. A student of chemistry, who attends the lecture-hall and the laboratory concurrently, positively defeats thereby the object of his stay at the school, and misses the aim of his studies. It is only after having gone through a complete course of theo-

retical instruction in the lecture-hall that the student can with advantage enter upon the practical part of chemistry; he must bring with him into the laboratory a thorough knowledge of the principles of the science, or he cannot possibly understand the practical operations. If he is ignorant of these principles, he has no business in the laboratory.

"In all industrial pursuits connected with the natural sciences, in fact, in all pursuits not simply dependent on manual dexterity, the development of the intellectual faculties, by what may be termed 'school-learning,' constitutes the basis and chief condition of progress and of every improvement. A young man, with a mind well stored with solid scientific acquirements, will, without difficulty or effort, master the technical part of an industrial pursuit; whereas, in general, an individual who may be thoroughly master of the technical part is altogether incapable of seizing upon any new fact that has not previously presented itself to him, or of comprehending a scientific principle and its application.

"I have often found that students coming from good colleges will speedily leave the pupils of industrial and polytechnic schools far behind them even in the natural sciences, though the latter, when compared with the former, were at first giants in knowledge."

THE NEW GRASS, *Spergula pilosa*, seems to be making its way to public favor abroad. Mr. D. Beaton, one of the principal writers of the *Cottage Gardener*, says in that journal:—

"I am not long in deciding on a thing of this kind, and am often put down as being too sanguine in these matters; but it is seldom indeed that things go different, or very different, from what I say. I say, then, of this lawn plant, that *it is destined to make a revolution in gardening*; that it is a discovery next to that of gas, steam, and electricity, for gardening; that every lawn in England, Ireland and Scotland may be made with it as smooth, and soft, and comfortable to walk on as any carpet in Her Majesty's drawing-rooms; and that it never wants a scythe or a mowing machine. The best lawns and the best carpets have worn out, hitherto, by time and usage, and so will this grass; but, of all the things on the face of the earth, it is the easiest thing to 'make up,' and to look as well as it did before. It will require the highest style of gardening, and it will teach this nation how gardening should be done. One of our best exhibitor-gardeners has pledged his credit, in my hands, on the point that he would willingly undertake, in one season, to cover every inch of ground which is under the scythe at the Crystal Palace with this new grass.

"A large piece of lawn, nine yards by eight yards, is already formed of it at Forest Hill; and two larger pieces of lawn, each thirty yards by sixteen yards, are now in the course of being covered with it; and ultimately every inch of the lawn all over the garden is to be covered with it, and with nothing else.

"No one can conceive the beauty of it without seeing it. The nap on the finest velvet is not more soft or more uniform; and there is a gloss all over the surface like that on the back of a mole. The garden where this has been proved is as steep as on the side of the Malvern Hills, and is of the strongest red clay; but the *Spergula* takes hold of the gravel walks just as readily as of this clay. It is like a mulching over the clay, which never allows the clay to crack, be the Summer ever so hot.

"The history of it is this. The proprietor, A. Mongredien, Esq., is a practical botanist; and to indulge in his favorite pursuit he has formed the most unique rock garden in the three kingdoms, at the foot of the slope, facing the north, for the growth of the fairest and scarcest cryptogamic plants in the British flora, from the tiniest ferns, through lycopodium, sphagnum, phascum, gymnostomum, Hymenostomum, trichostomum, dicranum, tortula, bryum, polystichum, hypnum, jungermannia, marchantia, and their extensive allies; also for British orchids, and the minutest and rarest alpine plants. Among the last, *Spergula pilosa*, as it is called, made its appearance; and increased so fast, and showed such delicate proportions, and such an inclination not to be kept within the limits of its due portion of the rock-work, that it seemed selfish to destroy so much of it without allowing kindred spirits to partake of the same pleasure and

amusement. Patches of it were set in better soil, and better returns were made by it; till at last, from patchwork to a whole quilt, and from that to a full-stretched carpet, which you have just heard of, were made with ease and pleasure. * * But some of the great

firms in the seed trade about London would not, or could not, believe in such marvels; they must see for themselves. They did see, and were convinced that a tithe of the "properties" of this plant was not given. * * Mr. Summers has undertaken the responsibility of supplying the three kingdoms with plants sufficient to set the plant on foot, through the

Messrs. Henderson, of the Wellington Road Nursery; that he has rented a greenhouse and so much ground for that purpose, and engaged a managing foreman to propagate the plant by the thousand and tens of thousands; that the concern will be called the Spergula Nursery; that he will, or could, undertake to cover the whole of the Crystal Palace grounds with this plant in one season; but for the present, and to such a period, applications for it must be made through the Wellington Road Nursery."

This all seems like success, and we hope it may so prove.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.—This Society held a spirited meeting at Rochester, on the 23d of June, and discussed several matters of public and local interest. Among the latter was the late frost, in which all agreed that the Rebecca grape stood the cold better than other kinds, owing to the fact of its ripening its wood as it grows, a fact greatly in its favor.

Ringling the grape-vine was alluded to and additional trials thought worthy of recommendation. The Early Scarlet strawberry came up on a vote first, and Wilson's Albany, second, though allowed to be too acid. The next choice was Hooker, Hovey's Seedling, Triomphe de Gand, Burr's New Pine, Genessee, Crimson Cone, Jenny Lind, Cushing, Longworth's Prolific, McAvoy's Extra Red, and so on down to a single vote for Scott's Seedling, Brighton Pine, Victoria, Huy's Seedling No. 1, Walker's Seedling, and Pyramidal Chilian; all seem to have advantages, and some may have preferences from seeing each peculiarly cultivated, &c. The diseases of the pear were discussed without much new light being thrown upon the topic—Mr. Barry closing the matter with, "the whole thing (fire blight?) is mysterious." Our able reporter sends a condensed report.

ANSWERS TO CORRESPONDENTS.

AMBROSIA APRICOT.—J. J. SMITH, ESQ.:—For the benefit of your correspondent, James Truitt, I would say the "Ambrosia Apricot" is of French origin. We imported it from Mr. Rivers some years since—fruited once and died. It has also fruited in the nursery of Daniel Brinckerhoff, Fishkill Landing, N. Y., and no doubt other places. It is of upright, vigorous growth, fruit rather large, quite early, and of excellent flavor; in fact, few are superior to it. Many of the nurserymen now advertise it for sale. CHAS. DOWNING.

THE POMOLOGICAL REPORT.—At a late meeting of the Hartford Horticultural Society, Dr. Russell presiding, the fact was brought to the notice of the Society that the Report of the proceedings of the American Pomological Society neglected to state the action of the Society in regard to the Hartford Prolific grape. Several of the delegates of the Society to the meeting of the American Pomological Society were present and gave their testimony, after which the following resolution was unanimously passed:—

"Resolved, That from the direct testimony of delegates of this Society to the American Pomological Society, we are entirely satisfied that the Hartford Prolific grape was thoroughly discussed, and put on the list of those promising well, by that Society at their meeting in New York last fall."

We have had various communications from persons present, stating that the "Report" did not embody the expressions and sometimes the opinions expressed at the meeting—some were modified, and some did not appear at all. We had a careful reporter on the spot, and it is quite remarkable to see the difference between the two accounts.

CATALOGUES, ETC., RECEIVED.

WHAT MAY BE LEARNED FROM A TREE.—Mr. Harland Coultas has brought this highly curious and interesting treatise to the third number; the fourth is in press, and we cannot recommend the expenditure of a dollar more agreeably and usefully than in the purchase of these at a cost of twenty-five cents each, enclosed to Mr. Coultas, Philadelphia. The numbers will be mailed to the purchaser, who will find a philosophical treatise on a subject of the deepest interest. Mr. C. depends upon subscriptions, having no bookseller.

Eleventh Annual Report of the Young Men's Mercantile Library Association of Pittsburg. 1859. This exhibits a taste for progress, and the books and lectures are doubtless sowing seeds of knowledge to save life from being a blank.

List of Premiums of the New Jersey State Agricultural Society for the Fifth Annual Exhibition, to be held at Elizabeth, 13th to 16th of September, 1859.

D. Miller, Jr.'s, Descriptive Catalogue of Fruit Trees, etc., etc. 1859-60. The Cumberland Nurseries, near Carlisle, Penn. Full and complete.

Illustrated and Descriptive Catalogue of Hardy Native Grape-Vines; also, of the Choicest Exotic Vines for Cold Vineries; of Gooseberries, Currants, etc. East Avenue Nurseries of Charles P. Bissell and Josiah Salter, Rochester, N. Y. A very handsomely illustrated catalogue, giving reliable information, and such as every person owning space for a vine in town or country should consult. We have seen no list more judiciously made, and the amateur who reads it will thank the authors, who we are glad to learn are reaping the reward of judicious cultivation and character earned by years of careful study.

No. 2 of A. Frost & Co's Descriptive Catalogue of Roses, Ornamental Trees, Shrubs, Bulbs, &c., &c., Rochester, N. Y. An able exposition of a good stock.

Fruit and Ornamental Trees and Shrubs. A hand-bill announcing that Mr. Samuel Miller has disposed of his stock at Calmdale, Lebanon county, Pa., to Wm. M. Hastings. We feel sure, however, that our friend will always grow fine fruits somewhere.

Lyte & Conard, Fruit, Shade, and Ornamental Trees, Enterprise, Pa.

W. C. Tucker, of the Washington Nurseries, Columbus, Miss.

A. F. Conard & Brother, West Grove, Pa.

Richardson, Warren & Co's, Abridged Catalogue, Olcott, N. Y.

Gossip.

THE GRAPE CROP ABOUT CINCINNATI.—Prospects for a splendid grape crop are brilliant. Having escaped the biting frost of June 5th, we are inclined to think the grape safe from all other evils. Should expectations be justified, this year's product will amply compensate for last year's failure. Vintners estimate the superficial area devoted to vineyards, in this county, at upwards of 2,000 acres, and some are sanguine that the average product will be 400 gallons of wine to the acre, or an aggregate of 800,000 gallons, (last year it was but 17,500). At an average of \$1 25 per gallon for the new wine, the crop would be worth \$1,200,000. If the quality is superior, the value will be greatly increased, but \$1 25 per gallon is the usual average.—*Ohio Cultivator*.

WHAT'S IN A NAME?—The Baltimore manure-makers and venders seem to place great faith in the term "manipulated," as applied to guanos,—for instance, the *American Farmer* advertises the "Excelsior manipulated guano," "Manipulated guano," "Higgin's per-manipulated guano," "Manipulated phospho-Peruvian guano."

There is a show of honesty in these names, for the true guanos are unmanipulated, and so

the term implies that it has been worked over in some way, and mixed with other things,—which is doubtless very true.—*Homestead*.

THE CORK TREE IN CALIFORNIA.—Messrs. Dressel & Co., of Sonoma, California, about three months ago, set on their ranch the seed of 100 cork trees, obtained from the Patent Office, at Washington, D. C. Of this number 85 have lived, and are now about six inches above the ground. No irrigation was used, and the young plants were exposed to the blighting effects of the cold spring winds, but, notwithstanding, they look quite healthy and flourishing.

SOUTHERN FRUIT.—In the *American Farmer* is a list of a baker's dozen of new Southern seedling apples, by J. Van Buren, of Clarke co., Georgia. Judging from the descriptions, some of them are very remarkable. One of them sometimes measures twenty-one inches in circumference. It is called "Cullawhee, and resembles a huge pomegranate. Another, the "Horn," is "hard as a billiard ball and keeps eternally." Another bears the euphonious name of "Cottugajah, or Raw Bread."

LEAFLESS PEAR-TREE LIVING TWO YEARS WITHOUT PUSHING.—The following is a remarkable instance of a pear-tree living two years without putting forth a leaf. A young rider-tree of the sort called Poire Belgæ (?) a kind very much resembling the Beurré Rance, was planted early in January, 1857, against a south aspect of a twelve feet high brick wall. Its roots were carefully mulched over with short stable litter, and they were frequently supplied with water during the warm summer months. The tree had been growing vigorously the previous year, supported apparently principally by two roots which had penetrated into the ground and had been cut rather too short in removal, leaving but a few small fibres round the collar of the plant. No perceptible attempt was made during that warm summer to put forth a leaf, and it was removed the following winter to be replaced by another, the bark being still green. I had it planted against a wall with an east aspect, where it remained through the second summer in the same inactive state. A graft taken of it on the 19th of June last is now putting forth vigorous buds, and a graft taken from it last week will, I feel confident, be attended with the same success. I had it replanted against the same wall a short time since, and it has now more the appearance of swelling its buds and still growing than it has had for the two past seasons. Instances of plants living through one season and growing the second are not unfrequent, but I have never heard of one surviving a second year with a chance of growing.—J. W., in *Gardener's Chronicle*.

IT is reported on good authority that the Indian Council has commissioned Mr. Clement Markham, a relative, we believe, of the Earl of Ellenborough, to proceed to South America, for the purpose of procuring seeds and plants of the various kinds of Cinchona, or "Peruvian bark" trees for transmission to India—an operation demanding not only great energy, but a very considerable amount of practical knowledge in gardening, as well as much botanical experience.

AT a late London exhibition of Pitcher plants, Messrs. Veitch and Gedney exhibited splendid collections, in which were noble examples of *latana*, *Hookeri*, *lævis*, *Rafflesiana*, *distillatoria*, *ampullacea*, *vittata*, and others, all of which excited much interest.

COLORING PLATES.—We have received from Mr. D. M. Dewey, of Rochester, a list of colored plates of fruits and flowers, &c., which embraces a great variety at low prices; the plates themselves we have not seen, but they may be viewed at the publication office, where specimens have been deposited for examination.

PRICES OF WORKS ON BOTANY AND GARDENING.—A part of the Library of the London Horticultural Society was brought to the hammer a few weeks since. As the sale gives a list of books not generally distributed in America, and also throws some light not only on the value of this description of property, but on the taste of the public, we select a few instances. An-

drews' *Heathery*, 6 vols., 8vo, 3*l.* 5*s.*; Bedford's (Duke of) *Salictum Woburnense*, colored plates, 14*l.* 5*s.*; Ditto *Pinetum Woburnense*, colored plates, 10*l.* 15*s.*, two works of mere curiosity and no scientific value; De Candolle's *Prodromus*, 14 vols., 5*l.*; *Dictionnaire des Sciences Naturelles*, 66 vols., 3*l.*; *Dictionnaire Classique d'Histoire Naturelle*, 16 vols., 1*l.* 3*s.*; *Botanical Register*, 21*l.* 10*s.*; Andrews' (H.) *Botanist's Repository*, 10 vols., 4to, 664 colored plates, 7*l.* 7*s.*; *Annales du Muséum*, 20 vols., russia, and *Memoires du Muséum*, 20 vols., calf, and *Nouvelles Annales du Muséum*, 4 vols., calf, in all 44 vols., 4to, 6*l.* 17*s.* 6*d.*; *Archives du Muséum*, 9 vols., 4to, 8*l.* 15*s.*; *Asiatic Researches*, 20 vols., (wanting Vol. XVII.), original edition, 19*l.*; Aublet's *Histoire des Plantes de la Guiane Française*, 4 vols., 392 plates, russia, very scarce, 10*s.* 6*d.*; Burchell's *Travels in the Interior of Southern Africa*, 2 vols., 4to, 2*l.* 11*s.*; Arabida's *Flora Fluminensis*, 11 vols., folio, in 5, 20*l.*; Bateman's *Orchidacæ of Mexico and Guatemala*, folio, 13*l.*; Cavanilles *Icones*, 6 vols., 4to, 9*l.* 9*s.*; Chandler's *Illustrations of Camellias*, 3*l.* 3*s.*; *Flora Danica*, fine paper, 10 vols., folio, 23*l.* 10*s.*; Galesio's *Pomona Italiana*, 2 vols., folio, 20*l.*; Griffith's *Posthumous Papers*, 11*l.* 5*s.*; Hooker's *Exotic Flora*, 3 vols., 8vo, 3*l.* 1*s.*; Lindley's *Genera and Species of Orchidaceous Plants*, 1*l.*; Hooker and Greville's *Icones Filicium*, 2 vols., colored plates, 11*l.*; Jacquin's *Eclogæ*, 10*l.* 5*s.*; Jacquin's *Icones Plantarum Rariorum*, 3 vols., 11*l.*; Jacquin's *Hortus Schœnbrunnensis*, 4 vols., folio, 13*l.*; Lambert's *Description of the Genus Pinus*, original edition, 9*l.*; Lindley's *Sertum Orchidaceum*, 11*l.* 15*s.*; Melville Island Herbarium of dried Plants, forming a complete Flora of Melville Island, and unique, 3*l.* 18*s.*; Redouté's *Roses*, 8vo, 1*l.* 10*s.*; The Linnean Society's *Transactions*, 20 vols., calf, and 6 parts sewed, 9*l.*; Loddiges' *Botanical Cabinet*, 20 vols., large pages, 9*l.* 15*s.*; Royle's *Illustrations of the Botany of the Himalayan Mountains*, 2 vols., 4to, 4*l.* 19*s.*; Ruiz & Pavon's *Flora Peruviana*, 4 vols., folio, 7*l.* 17*s.* 6*d.*; Sibthorp's *Flora Græca*, 10 vols., folio, 60*l.*; one of the very few original copies in existence; Sinclair's *Hortus Gramineus Woburnensis*, the folio, illustrated with dried specimens, in bad condition, 2*l.* 11*s.*; Wallich's *Plantæ Asiaticæ Rariores*, 3 vols., folio, 12*l.* 17*s.* 6*d.*; Sowerby's *English Botany*, 36 vols., and Supplement, 24*l.*; Sweet's *Geraniacæ*, 5 vols., 5*l.* 10*s.* Among the botanical and other drawings the following prices were realized: Ferdinand Bauer's *Delineations of the genus Passiflora*, 40 exquisite drawings in colors, with 40 other drawings of the dissections, 15*l.* 15*s.*; Chinese Drawings, 4 vols., containing 132 drawings, 18*l.*; Chinese Drawings of Plants, 5 vols.; undoubtedly the finest set in Europe of authentic Chinese drawings of plants, 70*l.*; 230 colored Drawings of Fruit, by W. Hooker, Robertson, Barbara Cotton, and others, 10 vols., 49*l.* 10*s.*

Correspondence.

J. JAY SMITH:—When I had the pleasure of seeing Mr. Saxton here, he requested me to present you with some statistics of fruit, and more particularly of the Strawberry in our vicinity and in our markets. I have taken great pains to obtain both from my own knowledge and experience, as well as from others, fruit-dealers, &c.—particularly from Mr. Stacy, who has extensive transactions with fruit in all parts of the Union. The best yield of the Hovey, upon the most suitable soils, and under the most judicious cultivation, is from forty to fifty bushels to the acre. This is on our new lands, the virgin forest soil, composed of disintegrated limestone and vegetable loam, the only kind of land really well suited to the Hovey and Hudson berries, and the best also for the raspberry; thirty to thirty-five bushels of the Hovey is the average crop. The Washington or Iowa, our earliest market berry, and very valuable to us on that account more particularly, produces almost any quantity. This last berry does not require rich land, but does best on quite moderately rich soils, and well even on quite poor nobs. The profits of the Hovey, under the best circumstances, are from \$100 to \$120 per acre, clear of all expenses

of paying and boarding hands, chiefly children. The newest virgin soil is the best for *all* berries here.

The *Willey's Seedling* will produce one hundred bushels to the acre, but is only fit for our market, as it is too small to ship to distant places; in one instance one hundred and thirty-five bushels of the Willey were gathered on the first picking. Immense quantities of berries are consumed here, shipped to other distant markets around, and put up in cans for Winter use. The price ranges from ten to twenty-five cents per quart, according to size and quality—size chiefly. There is a rapidly increasing commerce in the exchange of fruits at a distance, according to the season, of course, of each locality. Mr. Stacy could have shipped two thousand more bushels this season if our continued early drenching rains, and a sudden dryness afterwards had not too much dwarfed their size. The instructions of our Horticultural Society as to proper and successful culture have of late rather diminished the outside demand for the berry, as people at a distance are beginning to raise them largely for their own markets. As to the raspberry, now becoming as important a fruit here as the strawberry, the Black Caps produce, average crop, thirty to thirty-five bushels per acre; average price for the last five years \$3 50 per bushel. The "Red Cane," or "Cincinnati Red Antwerp," or most probably the "American Red," of Downing, produces about twenty-five bushels per acre, average crop, and average price \$4 50 per bushel. The Red variety holds out in bearing the longest. Our fruit dealers consider at present the Washington or Iowa, Hovey and Hudson still to be recommended for market culture. There is still a great difference in success as to kinds at twenty-five miles distance, on account of difference of soil, &c. Some of our cultivators are, however, going to give Wilson's Albany a fair trial, as it seems to promise much. McAvoy's Extra Red is also highly praised as a market fruit by many. It is, however, acid; but all berries, at any rate, require much study and experience on all points, for extensive market objects, before they can be safely decided upon. The Allen raspberry is one of which a good deal may be expected, as exhibited with us; for its large size, bright red color, firmness for carriage, uniformity of yielding qualities and complete hardness. The Kirtland, also; but it is not large, and its color is more dull, but it is quite hardy.

Our grape crop will be immense, if mildew and rot do not commit the ravages they have done several years past; and it is getting late, and therefore things look quite favorable at present. Our peach crop will be about half a crop; many are injured greatly, as well as all our fruits more or less this year, by that increasing pest—the curculio. Our apple crop is very slim, but bears much better.

Yours, &c.,

E. J. HOOPER, *Sec. Cin. Hort. Soc.*

Cincinnati, July 1st, 1859.

DEAR SIR:—I have, for two weeks, been trying to make up my mind to send you an account of our Peabody strawberries for the *Horticulturist*, but I am afraid that communications upon this subject are pouring in upon you so thickly now that you will hardly care to look at one from a new pen.

Well, I certainly am not one of those who pronounce against this splendid berry. I have given it a fair trial and, so far, it has far exceeded my highest expectations in all the essentials of a fine fruit—productiveness, flavor and size—and intend to confine myself hereafter principally to the cultivation of it alone. I have Wilson's and Hovey's seedlings, Boston Pine, and Longworth's Prolific, but none would compare with the Peabody. Last Spring, a year, I sent to Mr. Peabody for fifty plants. It was very late in the season and only thirty out of the package lived. From these I have now about one hundred and sixty plants in full bearing, and at least two thousand runners, which will bear next season.

I planted them in a rich, deep soil, which had been trenched and prepared for a grape-border, thinking I would remove them in the Fall, but they made such astonishing growth that I have left about half of the original thirty in that bed, and I am sure it would delight you to see them now. I have kept them from making runners and stimulated them by applications of liquid

manures, soap-suds, &c., until their trunks are as large as good sized radishes, and the leaves could not be covered with a bushel measure without pressing. I have seen some of the finest plants in Maryland, Delaware and Pennsylvania, but none were equal to these.

When I first saw the representation of this plant, in the Patent Office report, I thought the idea of such leaves and fruit was preposterous; but the leaves on my plants are fully as large, and the fruit has reached to the second size there represented and I have strong hopes of reaching the first; if not this year certainly the next.

Several of the strawberry venders in our market, to whom I shewed a box of them, begged me to let them have them if we had any for sale, for they "could get any price for them," as two of them remarked. Such is the Peabody, as I have proved it: and that, too, the first year, when the experience of many say it is far better the second and third year.

Now, Mr. Editor, why is it that those who supply our markets do not raise such fruit for sale? It takes no more ground, is far easier to cultivate and pick, measures more when picked, and brings three times the price. I am a novice in the cultivation of fruit, know almost nothing about it, and yet here is the result of my first experiment with strawberries:—Our bed, this year, was about thirty-eight feet long by five feet wide, from which we have gathered between thirty and forty quarts of fine large berries; beside this there were quite that many small ones left to rot, for want of some one to pick and eat them.

I must not forget to mention one thing about the Peabody strawberry. I am inclined to think it will not bear transportation. Last week I carried a small basket of them to Wilmington, Delaware, and, although I had them with me in the express train, by the time we arrived they had ripened and wilted considerably. If it had not been for this, I should have sent you some, and may do so yet, by pulling them a little before they are fully ripe.

Baltimore, June 17th, 1859.

Very truly yours,

CHAS. REESE.

[This is a famous success indeed, differing materially from our own and that of our neighbors.—ED. H.]

NOTES ON STRAWBERRIES.—The strawberry crop this season has been very productive, and much valuable knowledge has been obtained with reference to the comparative merits of sorts. It is agreed on all sides, that Wilson's Albany seedling is one of, if not the greatest of bearers, completely setting at rest the question, whether or not a hermaphrodite will produce as good a crop as a pistillate, even when the last is placed under the best conditions to ensure perfect fertilization from accompanying staminate.

The success attending the culture of foreign sorts has not hitherto been very encouraging; few of them coming up to the standard of their home reputation. Some of the more recent importations—as the *Triomphe de Gand*, Trollope's *Victoria*, and *Vicomtesse Hericart de Thury*—give promise of great excellence, as well as productiveness. The most beautiful crop we have ever seen was a bed of Trollope's *Victoria* the present season. Alongside of the Albany seedling it was considered to have produced as many quarts as it, although the berries were more numerous on the seedling. We question whether there is a finer flavored strawberry in cultivation than the "*Vicomtesse*;" and the "*Victoria*" is also of a rich, pine-apple flavor, and for size and beauty cannot easily be excelled.

We have heretofore been unable to account for the opposite and conflicting records of experience with foreign varieties. At the last meeting of the Pomological Convention, several cultivators spoke highly in favor of the kind known as *British Queen* (a distinct variety from the *Victoria*), while others had found it all but worthless. We are strongly inclined to believe that much depends upon the nature of the soil. In shallow, or light sandy or gravelly soils, these foreign varieties do not attain much perfection; while in deeply worked clayey loams they will produce abundant crops of the highest degree of excellence.

Another point has been clearly established; and that is: to cultivate in distinct hills or plants, rigidly destroying all runners during the Summer. Strong growing kinds, as the Peabody

seedling, Genessee, Longworth's Prolific and Boston Pine, cannot be raised to perfection if allowed to run into a dense thicket of foliage; but when planted eighteen inches apart, in rows, and kept clear of runners, they will thoroughly mature their flower buds and ripen every berry that sets.

When the soil is well enriched near the surface, and the plants allowed to run over the ground, a strong growth of leaves and little or no fruit will be the result; this has originated the idea that the soil prepared for strawberries should not be treated with putrescent manures, because the tops will outgrow the fruit. Such will not be the case if the plants are allowed plenty of space; the best fruit can only be obtained by planting in well manured and well trenched strong loam, or even a stiff clayey soil, planting widely apart at first, and keeping all runners constantly removed.

W. S. G.

A NEW HARDY WHITE GRAPE—THE KING.—As new varieties of grapes are occupying a good deal of attention at present, it may, perhaps, interest the readers of the *Horticulturist* to have a description of a new white grape, which seems to be perfectly hardy in this city, and of which the flavor is good—not equal, perhaps, to the finer foreign grapes, but still very good, being free from pulp and foxiness. Like many of our most valuable varieties of fruit, it was an accidental seedling which sprung up in a private garden in this city, and first fruited in 1857. Whether it originated from the seeds of the Sweetwater, Isabella, Black-cluster or Clinton, it is, perhaps, impossible to tell; but as it coincides perfectly in habit and foliage with the latter, it is probable that it is derived from that grape. However that may be, it seems to be as hardy as the Clinton; the small twigs on young plants, though unprotected, having been perfectly uninjured during the past Winter. The bunches are medium, shouldered, compact; berries medium, round, sweet, free from pulp, good flavor, white; ripe, middle of September. It was exhibited at the Fall meeting of the Fruit Growers' Society of western New York, and elicited the warmest commendation of the Committee on Native Fruits, who did me the honor to name it the King Grape.

WM. KING.

Rochester, N. Y., June 24th, 1859.

J. JAY SMITH, ESQ. :—A public journal like the *Horticulturist* is public property, and the same public who pay for it have a right to receive information from every page; personal differences have no business in it, unless they are so managed as to convey an equivalent amount of benefit to the subscribers collectively; and, even then, common courtesy ought to be shown by the debaters. Taking this view of the subject, I do not wish to offer any comments on Mr. Eaton's reply in the July number, headed "Facts in Grape Culture," but leave the public to decide the matter as it stands at present. I would, however, say to your correspondent that I am willing, with your permission, to discuss the points at issue with him, in a truly philosophical, and experienced practical manner, provided he will refrain from any personalities, and confine himself to real principles, without mixing up mere assertions, and thus enable us both to give the many readers of your widely spread journal the best knowledge we possess, and, perhaps, explain something of the right system of ventilating plant-houses.

Yours, most respectfully,

WM. CHORLTON.

New Brighton, S. I., July 1, 1859.

MR. EDITOR:—I observed an article on evergreens in the May number of the *Horticulturist*, by H. W. Sargent, Esq., New York, in which he seems to think *Cupressus Funeris* cannot thrive under the direct rays of the sun. We have tried it the past three years with success, and consider it one of our handsomest and best evergreens; the severe winter of 1857 and 1858 browned it badly, but with the warm days of Spring it recovered its original color. With all due respect to Mr. Sargent, according to our experiment, it is the cold and not the hot sun which affects it. The other plants mentioned do very well with us also—the English Laurel, which passed through the Winters of 1857 and 1858, uninjured, though very severe for this climate; the

Heath-leaved juniper has passed the late Winter very well, without protection; gardenias and cape jasmynes stood the past Winter without browning, but were generally killed to the ground the two former Winters. Verbenas have gone through the past Winter without injury; they were in full bloom April 15th.

HAMILTON J. CARTER.

Raleigh, N. C.

EDITOR HORTICULTURIST:—In reply to the inquiry in the last number, for a means to prevent the bleeding of the grape-vine, I will give that which has always proved effectual with me. Cut the end of the branch so as to take off sharp corners. Stretch over it, as a cap, a thin piece of gum-elastic, and tie tightly with a strong thread; over this put a piece of linen or muslin; tie that also closely, and the bleeding will be stopped. My first trials were without the linen; the gum stretched to the size of a hen's egg and burst, throwing out a fine stream of sap to the distance of a foot or more. Gum caps or *thimbles*, made purposely, would be much more convenient than sheet gum.

Respectfully yours,

J. WILLIAMS.

Philadelphia.

THE CLEVELAND HORTICULTURAL SOCIETY'S EXHIBITION.

THE June exhibition of the Cleveland Horticultural Society, which took place on Thursday and Friday, the 16th and 17th, was a success in the fullest sense of the word. The late frosts and heavy rains destroyed, or at best injured, much fruit and many flowers; still the show of both was excellent, and gave good evidence of the taste and skill of our amateurs and professional men. Beaumont & Co.'s exhibition of greenhouse plants was superb; it covered entirely one of the very large tables with a blaze of beauty. Many of the specimens were rare, and all were choice. Both this, and their fine collection of fuchsias and verbenas took first prizes. B. H. Bohmer had a small but very good collection of plants; Pollard a good show of pelargoniums; and Whitworth had also greenhouse plants, but not entered for competition. His verbenas took the second premium, and his floral design the first. H. B. Hurlbut had also a collection of greenhouse plants not entered.

Cut flowers were fine, although the heavy rain of the previous day had destroyed a great many, and hindered amateurs from competing for the premiums on verbenas; the flowers of all plants of this kind, out doors, being spoiled.

Roses were many, and good; Joseph Perkins, Esq., taking the first premium for the best and largest collection; nearly all his plants having been obtained directly from France. Lord Raglan was the finest. La Fontaine, Caroline de Sansal, Hermanee, Lion des Combats, Alice Leroy, M'me Hector Jaquin, Lavacca, Princess Amelie, Louisa Odier, Sydonia and M'me de Lamoricier were very fine. Mrs. Kirkpatrick took the first premium on twelve dissimilar blooms. This lady, also, exhibited some very fine phloxes, M'me Carl Wagner being the best. This is the best phlox we ever saw. Mrs. Styles had a good collection of unnamed roses, that were well grown. Mrs. Shelly's baskets of flowers exhibited good taste and skill; Mrs. S.'s flowers are always fine.

Bouquets were "thick as blackberries," and many of them of first quality. Mrs. Pease, daughter of Prof. Kirtland, had two.

For this season of the year the show of fruit was all that could be desired. Strawberries and cherries were abundant, and of the finest sorts. Dr. Edward Taylor, President of the Society, P. Sells, whose twenty acres of strawberries we noticed a few weeks ago, and others exhibited. Many of the new varieties were exhibited under common cultivation in this city for the first time. Wilson's Albany Seedling was deemed the best, everything considered. Cherries, notwithstanding it was rather too early, were plentiful and fine. Mr. Charles Pease was the largest exhibitor, and took the first premium. These cherries were from the old trees of his father-in-law, Prof. Kirtland, and included many of the choice sorts originated by him. Mr. P. had also on exhibition a number of very superior seedlings to which the committee awarded a premium.

In vegetables, the show as usual, at all such exhibitions, was not large; but Mr. E. S. Willard's pie-plant, etc., would be hard to beat; and Joseph Perkins' onions and cucumbers were of first quality. A. Stone, Jr., had some very fine new potatoes.

To the officers and members of this Society must be awarded all praise for their efforts to encourage horticulture; but to the ladies, who so nobly seconded their endeavors, and aided so materially in decorating the Hall, must be ascribed all due honor; without them, nothing could have been done, and the visitors and members alike bear witness to this. The Hall was finely wreathed with evergreens in festoons, and everything in good taste. All seemed delighted. The

attendance both evenings was large, and sufficient to meet every expectation of the officers. Premiums were awarded.—*Ohio Farmer*.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

THE regular June meeting of the "Fruit-Growers' Society of Western New York," was held pursuant to the call of the council, at Rochester, upon the 23d of that month. The "Genesee Valley Horticultural Society" changed the day of its meeting in order that the exhibition of fruits and flowers might be combined, and prove the best as well as the largest ever made at this season in Western New York.

The "Fruit-Growers'" session duly commenced in the forenoon, the president, Benjamin Hodge, in the chair. Messrs. P. Barry, W. P. Townsend, and S. H. Ainsworth, were appointed a committee to report the subjects for discussion.

The first regular question discussed was as follows: "Are there any benefits to be derived from the practice of ringing, ligatures, girdling, &c., of the grape-vine? and if so, what are they?"

Mr. Peck reminded the members of some bunches of grapes of perfectly enormous size exhibited in these rooms last fall; the extra growth of which was supposed to be owing to the removal of a ring of bark from the branch below the bunches exhibited.

Mr. Townsend, of Niagara county, spoke of having seen last fall at the State Fair, in Buffalo, some grapes from Chautauque county, which were quite a feature in the exhibition. The owner said that they were only the common Isabella grapes, and yet there were those who so far doubted his accuracy as to call upon Mr. Charles Downing (who was present) for his opinion as to whether the Isabella could ever be or become so large and fine a grape. After a good deal of inquiry, it was found that the portion of the vine which produced these specimens stood near an angle of the house where there was a good deal of passing, and where some accident had happened breaking the branch, or rupturing the downward sap vessels. The balance of the crop was of the usual size, and it was only the portion above the wound which produced these grapes. This practice of ringing is quite common in France and Germany. The operation is performed annually, and the result is that the size is considerably increased, and the fruit is ripened from one to two weeks earlier. A neighbor, Mr. Paign, often tied strings around the branches of his vines, and his crop was always increased in size and hastened in maturity.

Dr. Spence feared lest the effect of thus stimulating the growth of one year should be to lessen or destroy the prospect of future crops from that branch. Mr. Townsend thought that the vine could be thus treated with far greater safety than any other fruit-bearing wood, because our most experienced fruit-raisers, are all adopting the renewal system of training their grapes; whereby the branches which have borne the fruit are each year cut off and thrown away. Now, since we expect no future crop from these branches, what harm can be done to them if we pursue the course which will make the present crop as large as possible? The branches from which we expect the next year's grapes are not interfered with at all.

Mr. Wm. B. Smith remembered the grapes from Chautauque county, spoken of by Mr. Townsend, and his recollection was that the time of maturity was *not* hastened by the accident to the vine. To be sure, the grapes were almost twice the size of the ordinary Isabella; but, if he remembered right, the grapes were not quite ripe.

Judge Langworthy spoke of a mode of ligating branches of apple and peach-trees with a small annealed wire; applying the wire soon after the fruit had set, but removing it again after a few weeks. This ligation accelerated the period of the ripening of the apple and of the peach materially, and reasoning from analogy it ought to do the same with the grape.

Mr. S. H. Ainsworth spoke of some grapes, fully as large as the Black Hamburgh, which at the Ontario County Fair two years ago attracted considerable attention. Like the owner of the Chautauque county grapes, at Buffalo, nobody believed the exhibitor of these when he stated them to be simply Isabellas. Such an enormous increase of size caused a critical examination into the cause why, and it was found that near the ground a tendril had closely entwined itself the previous year, and very materially hindered the return flow of sap for that year; so that the whole force of the vine went into the fruit, which was very ripe, and in quality very fine. All the rest of the fruit upon the vine was perfect and of the usual size; but the fruit on this part was enormous—and this was the only lot of grapes exhibited at that time which was perfectly ripe: so that the ligation did in this case hasten the ripening.

Mr. Hoag, a grape-grower, remembered that several years ago, a part of one of his vines became accidentally girdled, and the one cluster which was beyond the accident ripened up perfectly, while the rest of the fruit did not mature that season. Here is one more instance where girdling hastened maturity.

Mr. Ainsworth now recollected a case similar to that of Mr. Hoag, in which two bunches were more than two weeks earlier than the rest of the crop, and the berries were fully doubled in size.

Mr. J. J. Thomas, of Cayuga county, doubted whether increasing the size of the fruit, or hastening its maturity by any such artificial processes, could possibly improve its quality.

Mr. Hoag would judge from the specimens which he had tasted that the quality was improved. If the grapes were really ripened they were better than unripe "sour grapes."

Mr. Maxwell would judge that the time when this girdling was done would exercise an important influence upon the result. Immediately after the fruit had set was the proper season to perform it. The operator must not remove too large a part of the bark, else he will kill vine and fruit. A very narrow ring of the bark was enough to remove. An old gardener, in Geneva, had long practiced this wiring or ligating, and always with very evident effect; both as to size and earliness.

Judge Langworthy agreed that about the time of the setting of the fruit was the best time for the ligation. A neighbor used always to bring the first peaches into the Rochester market, also the first early harvest apples, (and would say to *Mr. Thomas* that their flavor was as good as any others,) and he kept his process a secret for some time. By-and-by, it was found out that just after the fruit had set, he twisted a piece of fine wire closely on the old wood of the branches, and it did great good—when the fruit had nearly matured, he removed the wire, and no bad effect resulted to the tree.

Dr. Spence asked *Mr. S.*, "Would you recommend this girdling of trees as a steady practice?" since it so probably produces an abnormal condition of the tree.

Judge Langworthy answered "No," for in a great many cases the limb of the tree is sure to be lost.

W. P. Townsend. This may be so with trees, but with the grape-vine the case is widely different. Even if a very large portion of the vine be cut away, it will recover itself very much in a single year: and where the regular pruning of the vine is done upon the renewal system, the part ligated is that which is to be cut away in that same autumn, and the vine itself is actually renewed annually. The results cannot but be nice.

P. Barry, spoke of the experiments instituted by the French, in 1856. The Horticultural Society of Paris, was so much taken by the specimens which were presented to them, that they sent out a Committee to examine the condition of the vines upon which the operation had been performed. It happened that that season was a particularly favorable one, and that all the grapes were ripened that year, so the gain in earliness was not considered as proved.

This ligating the vine is an old practice known and practiced in the time of the Romans. *Mr. Knight*, an eminent English writer speaks favorably of the practice under suitable restrictions; as also does *Mr. Rivers*. *Mr. Barry* did not feel convinced that it was a course which was to be recommended for general practice; but in the hands of gardeners of judgment and experience, it does add to the size and hasten the maturity of fruit. While it does not injure the quality of the fruit so increased in size, it probably does deteriorate the rest of the fruit and most certainly does injure the roots.

This course can be practiced upon the grape-vine with more impunity than upon any other plant, because it makes new wood so easily. This is an interesting matter and well worthy the attention and the experiments of gentlemen.

Mr. Townsend hoped that the members would experiment and give us their results. Could not quite agree with *Mr. Barry* as to the injury to the rest of the fruit or to the roots. Let us take an *Isabella* pruned according to the renewal system and we thus have in fact two vines, taking sap from the roots perfecting it in the leaves and returning a part to the roots. Now by the girdling we only interfere with the processes of a part of one of these two, and the only loss to the root is that of the sap appropriated to the extra development of the fruit and the growth of a little more wood.

Judge Langworthy thought that if the ligating were only around the growth of this year, no effect would result ill to the vine. If the main vine be girdled *Mr. Barry's* idea is correct, and the roots must be injured. (*Judge L.* does not speak of the renewal system where only the wood to be cut away the next year was girdled, and full half the wood not interfered with and the main vine never touched.—*Reporter.*) If there be any benefit in it at all it will be very evident in its application to the *Catawba* vine, for the gain of a fortnight in ripening will be very important in this climate. Strongly urged members to try it: use a small annealed wire, twisting firmly with pincers and we may this fall see at our next meeting what few of us have ever seen; i. e. a ripe *Catawba* grape.

Wm. B. Smith hoped the members would all experiment, and at the September meeting relate and exhibit the results of their experience.

The second regular question was now in order. The late frost. What has been its effects upon the grape, both with reference to the present and next season's crop?

This subject of the frost has been so fully commented upon in the *Agricultural papers* of the day, that we do not think it necessary to repeat it.

The third regular question was now in order, viz.: Which are the best varieties of strawberry

for general profitable cultivation according to the present experience? and which is the most profitable and at the same time most economical mode of cultivation?

Mr. H. N. Langworthy said that we ought first to fully understand what were the qualifications which we desired in the strawberry plant. We certainly, in this latitude, wish hardy plants, to withstand the severities and changes of our winters. We want berries of a good size, of a bright, attractive color, of a fine flavor, with the flesh hard and firm, so that it will bear carrying to market. We also wish the vines to have good strong foot-stalks to keep up the berries from the dirt while ripening.

L. B. Langworthy thought Wilson's Albany was the greatest bearer; as to size it was very fair, as to flavor pretty good. Triomphe de Gand is of enormous size, but feared it would fall off as to size when cultivated in fields for market. Knew that the Hooker makes a good field culture berry, and does not run down.

C. M. Hooker, of Monroe Co., said that Triomphe de Gand must be cultivated in hills in order to be good for year after year.

J. J. Thomas, of Cayuga Co., spoke very highly of Wilson's Albany. Peabody's Seedling, although of good flavor always, did not fill all the conditions above stated. For a couple of years the fruit is excellent and very large, but the vine has such a strong tendency to cover the ground with runners, that unless kept in hills they bear very little. Some gentlemen speak of the flavor of the wild strawberry as being always superior to that of the cultivated. Now this depends very much upon the condition of the eaters. A person who is hungry for fruit will call anything good, while those who have abundance are a little more nice in their taste.

The commendation of Large Early Scarlet was unlimited. Three of the members had found the Hooker to be not quite hardy to withstand the changes of our winters. A kind of mulching was mentioned, which commended itself to us very much. Dig in the fall a sufficient quantity of black muck, which spread in proper location to freeze and thaw during winter. It will thus be as fine as white sand, and (though of different color) as clean, while it will have no seeds of any sort in it. This spread over the beds acts as a mulch, protects from the cold in winter, is an excellent fertilizer, and assists in keeping the fruit clean.

A gentleman here insisted upon introducing the subject of diseases of the Pear, and presented the stumps of some of his standard pear-trees which had died this spring in what was (to him) a very singular manner.

In the evening, at "Corinthian Hall," the exhibition of fruits was combined with that of flowers, &c., by the Genessee Valley Horticultural Society, and attracted a vast crowd.

BUFFALO HORTICULTURAL SOCIETY.

The June exhibition of the Society was held at St. James Hall, on June 23d and 24th. The hall was very handsomely decorated with flowers.

Taking into consideration the extremely unfavorable weather, the exhibition was an undoubted success. In fruits, the show of grapes, cherries and strawberries, particularly the former, was very interesting, and the various collections embraced the following sorts:

Grapes—Black Hamburg, Grizzly Frontignan, West's St. Peter's, Zinfindal and Pitmaston White Cluster, from the President and Hon. E. G. Spaulding.

Cherries—American Amber, Mayduke, Bigarreau, Bigarreau de Lyon, White Bigarreau, Ohio Beauty, Doctor, Cleveland Bigarreau, Rockport Bigarreau, Black Tartarian, etc., from Messrs. Hodge, Eaton, Manley, Coppock, Bullymore, Coats, Clark and Stevens.

Strawberries—Wilson's Albany, Monroe Scarlet, Bicton Pine, Schreike's Pistillate, Necked Pine, Longworth's Prolific, Hovey's Seedling, Crimson Cone, Large Early Scarlet, British Queen and Peabody's Seedling, from Messrs. Townsend, Warren, Beecher, Coppock, Needham, Playter, Presbrey and Barton.

Currants—White Grape, Cherry, May's Victoria and Black Naples.

The grapes were the feature of the exhibition, and attracted universal attention. They were mostly well grown and colored, and reflected much credit upon the producers. Prizes were awarded.

In flowers the entries are too numerous to specify the contributors. Roses were badly affected by the frost, and fewer in number than on former occasions. Miscellaneous flowers were abundant, as well as pot plants, and beautiful bouquets were presented.

The show of vegetables was limited, although fine rhubarb, radishes, cucumbers, &c., were exhibited, and no prizes were awarded in this department.

REGULAR MEETING, JULY 5TH.—This being the day for the award of prizes on forced grapes and cherries, a fine exhibition of these two fruits was made. Over forty varieties of cherries were however on hand, together with several fine collections of currants, and many fine roses, &c.

JOHN B. EATON, Recording Secretary.



MAGNOLIA CAMPBELLII.

ILL.



OT very many years ago, there was exhibited in a window in the Strand, London, a huge plate, apparently of ice; a little water was in the plate around a remarkably transparent piece of glass, and on the mass was written "Ice for sale." No shop in busy London attracted more attention or had more stationary gazers: we heard of this piece of "ice" in all parts of the island, including Scotland; for so lately as 1845 few English people had handled ice in summer, and not one of them had stopped to reflect that a piece such as they supposed they had seen would not keep from day to day as the representative glass had done.

Steamships were then a novelty, but had commenced to bring a few tropical fruits to England, and oranges from Portugal and Spain. Dining one day with a literary gentleman, he descanted largely on the improved lot of people of moderate incomes, and was proud that he could treat his friends to a pine-apple and some ice, luxuries heretofore confined to the wealthy.

In Switzerland, in the same year, after a weary tramp among the hills and valleys, our party approached a glacier in the valley of Grindelwald; but night coming on we took up our quarters in a new hostelry, where there was evidence of a strong desire to please. We asked for iced milk, and that it might be brought quickly. The ready "yes" gave promise of the veritable article; but time flew slowly, and there was neither ice nor milk. After an hour of impatience the bell was answered, and another favorable response; but this too, failing of results, the party agreed to go and see what was the matter,—and after much questioning it came out that a maid had gone to the pasture pretty high up the mountain, and a man had taken a bucket and gone to the glacier for the ice, both of which made their appearance as we were retiring, at eleven o'clock.

These reminiscences show that Europe has only lately waked up to the importance of employing ice in summer. In Paris, they produce the article artificially, and they have a very pretty way of freezing drinking-water in a glass bottle. You send an empty bottle to the manufactory and they give you another thus congealed for a penny or two; it melts about as rapidly as you require it, and is most valuable in that warm city during summer. They also make and sell solid blocks of ice, but at a high price. With their railroads, and the glaciers of Switzerland, Paris and other continental cities might be supplied with this luxury at a cheap rate. Ice creams are a very dear article in both London and Paris, being from twice to four times the price of New York or Philadelphia. In Havana, ice has become an indispensable article; they contrive to give delicious ice-waters from the various fine fruits of the island, at moderate charges. In the East Indies, and indeed, in all wealthy tropical countries, ice supplied from America is a necessity; once introduced, no moderately high price is sufficient to exclude it; and its absence, from any unforeseen cause, creates a severe panic.

The great improvements of building ice-houses in our own climate, consist in placing the food and fruit room below the mass, and in thoroughly draining off the water as it melts.

The present season, New York and Philadelphia, and of course, the more southern cities, have been more or less dependent on the Bostonians; but what, we would ask, is to prevent another advance in the ice trade among us? there is scarcely any regular investment that would pay better than laying in during a cold winter, enough for two seasons,—and with care there is no difficulty in doing this. There would be some loss necessarily by melting, but every one of any experience will remember that not unfrequently, at the close of the warm season, their ice-house has presented the appearance of sufficient almost for another summer. We fully believe it to be within the scope of commercial, and of course of private advantage, to preserve ice for two seasons; the hint may be taken advantage of by somebody who can afford to lay out of a small capital for the prospect of a larger profit. If the winter that it was kept over proved to be a cold one and others had ice as usual, our speculator on probabilities would still have his crop for sale, losing only the interest and a slight decrease of bulk; whereas, in case of a deficiency, his profits would be immense. In private families two houses would be advantageous for this purpose, the one to be kept over, not being opened till actually wanted; and we are not sure but that in most cases two houses thus treated are better than one.

Mr. Clay, in one of his speeches, when complimenting our eastern friends for their industry, remarked that they found on their soil nothing to export but granite and ice—"absolutely nothing but granite and ice," and yet see their prosperity. There are yet plenty of openings in the ice trade for enterprising men.

THE ORCHARD HOUSE.—A FEW SUGGESTIONS.

BY FOX MEADOW.

MR. EDITOR:—It is said necessity is the mother of invention. The truth of this is made manifest daily. Necessity and repeated failures are oftentimes the means by which the observing mind traces the cause, and ultimates wonderful scientific practical results, and makes *the man of experience*.

Such we presume to be the cause that brought out the "Rivers' Orchard House," which is now giving so much pleasure and delight in England, and which is destined to become in this country, and very shortly, too, one of the noblest features in horticulture.

The public have greatly to thank you for the republication of Mr. Rivers' valuable manual. We know that the orchard house can be so designed, arranged, and adapted to fruit and plants, as to comprehend the whole in one magnificent structure; and be assured, Mr. Editor, that if your humble servant only held the influence or power, he would place just such a *noble orchard house in a noble position* in our New York to be *noble park*. Why should such a park be without its Sydenham? Surely this would be as appropriate to the grounds as a tower, from whence to gaze at the stars.

With what joy would the citizens of New York and its suburbs, pay their twenty-five cents for admission to feast their eyes and charm their hearts

by viewing the beautiful designs of man and the wonderful productions of God. The London trains carry out daily many *hundreds* to view the great Paxtonian Palace, where man's ingenuity has combined living colors to represent vivid fire,—here, so bright, the glare dazzles the eye,—there, the soft combinations of the rainbow; and yonder in the distance, the lurid fire of one of nature's outlaws bounding through eternal space;—and we stand in awe, wonder, and amazement. The man that has been tippling at the rum-bowl all his life, stands fixed to the spot. *He is thinking*—absorbed; you see him again entering the interior of the palace; he pauses. The glittering festoons suspended from crystal domes, never before touched his sight, and he seems to be recalling his senses; “is this a reality, or am I in a fairy land!” At length he concludes he will try and grow some of those beauties in his own neglected garden, and he does so. The money he found for rum, goes now to buy flowers and fruit trees; a higher taste has grown up; the purity of the one has banished the other; horticulture makes good men and intelligent fathers.

The orchard house is the house for the *million*;—the house for him who possesses a princely income, and him who toils for his daily bread. From a magnificent building capable of growing all fruits, flowers and vegetables, down to the small pit for salads, strawberries, &c. The old notion of requiring large tracts of land for roots to ramble about in, will soon fall to the shades, and the only thing that horticulture requires at the present day is, to have amongst us good practical gardeners, who are good practical chemists. There are plenty of good chemists in the country, and if they had two heads on their shoulders, (gardener and chemist,) gardeners would be much benefited by their experience. It appears to me that when men *really know something* they think it worth nothing to the public unless it is wrapped up in a lot of mysticism, to let others see they know something that no one else can comprehend; and they use large words where simple, easy terms would express things much better, and be understood by everybody.

But of orchard houses, Mr. Editor. First, the materials of which they should be built; secondly, their construction; thirdly, of the fruit trees and how to grow them, with the kinds adapted for the purpose; and lastly, on the bountiful crops plants are capable of producing in the orchard house properly constructed and managed;—and as these few observations are not needed by gardeners, but are intended for amateurs, I shall call things by their simple terms, so as to be generally understood.

First, the kind of material of which the house should be built. In England, the Rivers house is simple, light and cheap, and well adapted to the mild winters of that country, but here there are contingencies that England little dreams of. In the first place, one of our heavy winter's snows on Mr. Rivers' rafters of fir poles, would make an end of the house and all inside of it. We say, therefore, use strong, substantial rafters; pine, two by seven inches, and placed six feet apart, with three cross bars one and a half by three inches, placed over, or let into the rafter for supporting the glass bars. Make a good strong roof. The bars for receiving the glass can be cut out of one-inch pine boards, which makes them strong enough, one by one inch and a half, and grooved half an inch deep and a quarter of an inch on. These bars are easily got out by the circular saw, and are very moderately cheap.

Mr. Rivers, if I understand him correctly, is of opinion that all fruit trees in the orchard house would be benefited if the temperature of the house did not drop below 26° —*so are we*. The less *freezing* that goes on in the roots and branches of fruit trees, the better. The less *sun* they get on them when frozen, the better. Let us here suggest that the house be built tight as well as strong. We know what March winds are in England, and bitter experience has taught us what they are in America. It is the general slaughter month of the whole year.

Build your orchard houses tight, and at the same time put in all the ventilation that you possibly can, and use no hemlock boards.

One summer's sun, and they are all in ribbon strips ;—use pine ; it can be bought nearly as cheap as hemlock ; and also take care to well batten all the ventilators, or they will soon warp and split ; my experience is, no wooden ventilator can be made tight unless it is panelled ; then they will stand.

Now, in reference to the glazing, the putty should have half white lead worked through it ; bed the bars with the putty, and press the glass down tight to the wood ; take the putty-knife and smooth off the putty that stands on the upper surface of the glass, and that is all that is required on the outside ; there is no necessity of puttying on the upper surface of the glass, as it only cracks and breaks away, and no painting outside will prevent it. After finishing the outside as directed above, paint down each bar with good thick white lead, and you will find the roof to last longer than by any of the present modes of work. You also will be required to take off the extra putty on the inside, and paint as before. Houses built by placing the rafters six feet apart, resting on locust or cedar posts, should have three cross bars between the rafters, one and a half by three inches, to support the glass bars, and placed distant from each other to suit the size of the glass. Houses built in this manner are strong and substantial, have a very nice appearance, and can be built for from two and a half to three dollars per lineal foot, complete. We know of over a thousand lineal feet erected in this way for the exotic grape alone, which is all heated throughout with hot water ; and as to the general appearance, there are hundreds of houses that have cost over twelve and fourteen dollars per foot, that look no better, if they look as well. Houses should be built *strong* ; if rough, you can dispense altogether with the carpenter's plane ; *it is a very expensive tool*.

Our next suggestion is in reference to the form of the house. The span roof I think will be found best adapted to this purpose. The great question, however, is, How are we to grow these fruit trees ? How is labor to be saved ? In England this is no question of importance, but in America it is a very serious one, with the private establishments as well as the commercial gardens. In the first place I should use no pots at all ; use boxes. They do not attract the heat like the flower pot, and consequently they will take much less watering. I have grown vines from eyes in boxes and pots side by side, the pot containing three times the amount of soil that was held by the box, but the box invariably made three times the amount of wood or cane. It makes quite a difference to a plant whether its roots cling to the side of a *roasting hot pot*, or a *cool moist board*.

And it makes also a great difference in the producing of red spider, bug and scale, and a whole host of these detestable, ever-tantalizing little pests to horticulture. But if these fruit trees are to be grown for a commercial purpose, we say, use neither pots nor boxes. *Plant out* ;—now inplanting out

we don't wish to be understood that the borders must be large vine borders, but they may be made two feet wide by eighteen or twenty-four inches deep, or so constructed as to suit the house. It is not a great *bulk of soil* that plants *live on*, but the *element they suck up* from it, and the less the quantity of soil the plant has to live in, and feed from, the greater is the amount of mouths or feeders or roots they will throw out in search of their required support; and if you keep your little borders well mulched (top dressed) with good decomposed manure, and constantly pour over that mulching guano water, there is no fear of the plant troubling itself much about the *bulk* of soil you have given it to grow in.

As a proof of this, we will give you a fact in connection with this mode of culture. We know a small house one hundred and two feet long, a lean-to, in the front and back of which was run a lot of common boards that made a sort of trough about two feet wide and deep the whole length, and this was filled in with soil, in May 1st, 1857, and then was put in young vine eyes just beginning to grow, and they were planted one foot apart. In the following May, 1858, we saw the whole house full of ripe fruit, the bunches weighing from three quarters to a pound and a quarter each; this season was cut the second crop off these same vines, March 20th, 1859. The fruit cut from one vine we had the curiosity to see weighed,—it weighed over ten pounds; and four of the bunches weighed one and a half pounds each; one bunch two pounds; and the whole of the fruit was well colored and well swelled. Now we could not begin to do anything like this in pots; in fact it would be folly to attempt it.

The next question we have to think about is, the sorts of fruits adapted for the Orchard House, and this question will not take much time to answer, nor much space in your valuable journal; for we know no fruit that cannot be induced to pay due respect for its protection and care. Perhaps, above all, the plum would feel doubly dutiful for protecting it from the ravages of the curculio. The peach, apricot, nectarine, and plum, can and will be grown to perfection; but we must not be satisfied with the *dozen*—we must and will have them by the *thousand*.

So great is the demand for fine fruits of all kinds in the great city of New York, that some of the prices paid are almost fabulous, and fruits of the highest character are now *daily* standing dishes on the tables. Ere long we shall see the pine-apple grown here for the public markets to a much greater extent and perfection than is now done in Europe. What a glorious sight will be the *Fruit Palace* of America, with its noble centre, glowing with its golden pine-apples, and the sweet honey-dew dripping from its luscious cheek. Soon will the difference of quality be appreciated; soon will it be found that the imported pine-apple is as different from the home cultivated one as the Bartlett pear is from the Swedish turnip. They must and will be grown for sale. Peaches are sold in Broadway at a dollar each when those from the South command no more for a whole basket full, and the ladies that promenade that great thoroughfare *know* pretty well that all the black grapes are not Black Isabellas. The first bunch of Hamburgs that was ever offered in New York was sold with difficulty at twenty-five cents per pound; now, at the same season of the year, they will command two dollars. Four years ago grapes could be sent from Boston *called* Black Hamburgs, red as foxes, with mealy bugs running all over the bunches as they hung in the windows, apparently frightened to death at their new

quarters ; but to-day, Mr. Editor, those same fruiterers say, Keep your red grapes and white bugs at home,—and at last we see them in Washington Market, left at some vegetable stall to be sold on commission. Should you chance to walk into some of the fruit stores in Broadway to buy a bunch of grapes, you must not feel surprised if the bunch of Hamburgs or Muscats should weigh five pounds, Royal Muscadine two, and White Frontignan three pounds. Yes, sir, we may stare at the grapes, but they are in the scales—we can't deny it—and they are plentiful enough, too.

How to grow or how to train trees for the Orchard House, is another point that we shall have to talk a little more about shortly, in detail ; but for the present we say that if the amateur wishes to grow them in boxes, he may adopt the finger and thumb system of pruning,—the same, in fact, that he practises on his specimen plants in the greenhouse or stove. By constant stopping, after beginning properly, any form can be given to the trees that may be desired, and at the same time made productive. The great demand for fine fruits in the city of New York alone will cause large numbers of orchard houses to be soon erected. The cry is, Where can we buy peaches, plums, nectarines, and apricots ? We shall soon see acres of glass erected for this purpose, and still the cry will be, *give us more*. Grapes under glass are at the present the only fruit that is generally in cultivation ; but there are many other fruits that equally demand the attention of the commercial gardener, which would be as productive and profitable. Strong, rough, tight, well ventilated, cheap houses, is what is required here, made tight to keep out the frost, whitewashed to keep out the sun, (the glass in winter), employ small, shallow borders for the roots, plenty of ventilation or air, plenty of liquid manure, plenty of determination to accomplish the end, and you will find plenty of success.

IVY.

BY THE EDITOR.

This invaluable evergreen climber is not sufficiently appreciated in this country ; wherever it will thrive it should be planted, both for covering walls and to run up the blank stems of trees, using bone manure as the best enricher of its soil. Nothing creates the idea of age so quickly as abundance of ivy. Where it is not sufficiently hardy to ascend trees or walls, a handsome effect may be produced by allowing it to run over the surface of the ground, where it will form a fine verdure in shade that injures grass. We are not sure but that it might form a carpet of green in the southern states, where grass is difficult to cultivate. At Philadelphia it succeeds admirably, though some of the finest old specimens are occasionally totally destroyed by the cold ; sudden extremes from warmth to great depression of the thermometer, seem unfavorable to its longevity. The "English" here is the most hardy, and the "Irish" the most rapid growing, though some difference of opinion exists on this subject. Philadelphia is probably the northern limit where you often see large walls ivy-covered, though at Sunnyside, Washington Irving's, and a few other places in that region, where it is planted on the *north* sides of dwellings, it is occasionally seen very beautiful and healthy ; but generally at the North it can be success-



IVY BOWER.

fully grown on the ground, where it runs very well, and if covered with leaves and brush it will do perfectly. It might be employed as in the preceding cut even in northern climates, and annually laid down carefully before the cold weather sets in, and we advise a trial of this as a probable means of success. It should always be protected from the sun in winter, which kills it by sudden thawing after severe frost. Downing thought so highly of it as to say nothing could take its place. For further particulars regarding this most beautiful of climbers, we refer to an article of some length from our own pen, in the 4th Vol. of the *Horticulturist*, December, 1849, page 252, and now proceed with our translation from the *Revue Horticole*:

"There may be used for the ornamentation of parks and gardens, an arrangement of Ivy to form a trunk by uniting and interlacing its branches. I am certain of this from experience: in 1852, I transplanted a Laricio Pine sixteen feet high, and placed it before the house I occupy, in the Jardin des Plantes. The tree died in a few months. I had the branches cut off, and then planted at the root two Ivys and two Banksia roses; for two years, the two plants lived in harmony, and the yellow flowers of the Banksia roses arranged themselves very gracefully on the deep green of the Ivy leaves; but little by little the latter outgrew the rose, stifled its more feeble companion, and reached the top of the pine trunk. Then I had an iron circle of three feet in diameter placed at the summit of the tree; the branches of the Ivy very soon clasped the circumference, and now they weep over all around, and present the appearance of a candelabra always green. The stem of the Ivy is already strong enough to support itself, if the support should crumble; but the resinous nature of this evergreen trunk ensures its duration. If I had it to do again, I would make the circle six feet in diameter, in order to have between the trunk and falling branches, a bower, where at all times shade and freshness would be found.

"In central Europe, the Ivy grows very vigorously, but not beyond the 58° of latitude. It grows, however, in the island of Gothland; but it is no longer found in Sweden, in Ostrogothia, or in Westrogothia. In the British Isles, it stops at the Shetland Isles, and no longer grows in the Hebrides, nor in the Ferve. In England and in Germany, it embellishes all the ruins, clothing them with perpetual verdure. No traveller can forget the Ivys which adorn the ruins of the Castle of Heidelberg; those of the feudal fortress of Bressuire, and the Castle of Courtalein, (Eure-et-Loire,) inherited by the family of Montmorency. This castle dates back to the year 1440; it is defended by a tower of sixty-nine feet in height; the ivy is trained with much care on the trellis, and the windows seem carved out of the foliage. It would be difficult to conceive the charming effect, which this castle of verdure produces.

"In England, I admired the Ivys which cover the ruins of Kenilworth Castle; Loudon cites those of Brockley Hall, in Somersetshire, that climb on the trees. One is ten feet in diameter, another eleven feet—both must be very old, for the growth of the Ivy is slower than in the middle of France. Another Ivy covers a cottage in the city of Morpeth, in Northumberland; it shows a diameter of nineteen feet to the height where it divides into branches, and ten feet above the soil.

"Ivys so often cover ruins or old edifices, that it would be very interesting to study their growth in diameter. It can be done by counting the

number of woody layers of the large Ivys cut at the base. A certain number of examples compared among themselves would furnish us means that would serve for a foundation for calculations upon the age of all the large Ivys, whose diameter should have been measured ; for these plants growing near a ruin, in a soil which is neither cultivated nor manured, must have a moderate growth, such as we might expect. The estimation of the age of an Ivy on a ruin, would be very interesting in itself, for I am convinced that examples of them would be found of astonishing longevity ! further, we would plainly have a minimum limit for the antiquity of the ruin itself. In short, the latter is necessarily anterior to the Ivy that covers it. The vegetable physiology and the history of ruined monuments, such as cover the soil of Europe, would then have an equal interest if these studies were pursued."

IONA, PELHAM, AND WODENETHE.

BY R. G. PARDEE.

A BRIEF visit to the three above-named places of interest up the Hudson, was enjoyed during the past season.

At Iona—a rocky isle of about three hundred acres, near the west shore of the Hudson, two miles above Peekskill—I found Dr. Grant most industriously employed in the cultivation of his grapes. He has with skill and vast labor brought the forty acres of tillable land on the island to a very high state of cultivation, and covered it with vineyards and orchards of the choicest grapes, apples, pears, cherries, plums, and other fruits.

Deep trenching, thorough pulverization of the soil, mixtures of compost, leaf-mold and muck, have accomplished wonders. Dr. Grant is well known as a most intelligent and enthusiastic cultivator of grapes. He has not only vast numbers of vines, of most all the varieties of hardy grapes in bearing ; but his activity in the way of propagation astonished me. For instance, he has more than ten thousand plants of the popular Delaware grape, that are No. 1, with growths of from six to ten feet this season. Then follow as many more of not quite so mature growth and age. He has besides, an unusual stock of Allen's New Hybrid, which the doctor thinks will prove to be the best white grape ; thus rivalling the Rebecca. Then follow the Anna, Clara, and various new seedlings, some of which promise well. All were in fine condition.

From thence I proceeded on a long desired visit to Pelham, the well known country seat of Robert L. Pell, Esq., the successor of General James Tallmadge as President of the American Institute.

Pelham is situated on the west shore of the noble Hudson, stretching along its shores for nearly three miles, comprising a princely estate of *twelve hundred* acres. Here I saw, what was most nearly my ideal of those magnificent English estates of which we read.

Long, persevering, intelligent labor, with ample means, has brought these fair acres up to the thorough high-culture of the best garden, and the returns now, I should judge, abundantly repay the outlay.

Thorough drainage by nearly 100 miles of stone drains ; deep tillage, from eighteen inches to three feet ; with all the manure needed, intelli-

gently and timely applied, has done the work. Two hundred acres and over of large, flourishing Newtown Pippin apple-trees, said to number more than 20,000 bearing trees, was one of the sights. Eighty acres of potatoes in full vigor, of one variety, his early seedling, with rows three-fourths of a mile in length, were worth seeing.

The acres of grape vineyards, of raspberries and strawberries, all cultivated in the best manner; the thorough-bred horses and cattle, and the most costly sheep, all well cared for and thriving, were truly pleasant to behold.

It was delightful to ramble over a part of the *nine* miles of gravel walks in the spacious lawns and park. It was a rare treat to examine the *nine* beautiful fish-ponds and the *fifty* varieties of choice fish raised there; to see the fish come on call to the banks where we were standing, and eat the bread offered them, running boldly through and over our hands by the thousands; young shad, gold fish, and other kinds, feeding as tamely as if a treaty of peace was signed, sealed and recorded between us.

But I dare tell no more of Pelham at this time, and will drop down to Wodenethe, the splendid country seat of H. W. Sargent, Esq., near Fish-kill. Here we found a tasteful and elegant mansion, with some twenty-five acres of the most highly ornamented lawns and gardens.

Enterprise, skill, taste, and wealth, have probably here gathered the largest and finest collection of evergreens of which our country can boast. It is barely possible that there may be one exception. It was gratifying to walk over these grounds and feast on the rare varieties, and thorough training of the plants. Hundreds are worthy of honorable mention, but I do not propose to enumerate more than a few. Some exquisite specimens of *Araucaria excelsa*, *Torreya taxifolia*, *Cryptomeria Japonica*, *Glyphostrobus pendula*, *Abies Monstrosa*, fern-leaved *Arbor Vitæ*, and the variegated cedars, particularly attracted attention.

The specimens also of variegated cut-leaved oak, ash, beech, and horse-chestnut, were very fine.

I also noticed the striped green and plain green Century plants, (*Aloe*), the largest size and in the best possible condition. The same may be said of the Sago and other varieties of the palm. A house of liberal proportions is now in process of erection expressly for these palm-trees to luxuriate in.

The thousands of plants in the numerous borders of the magnificent *Rhododendrons*, *Ericas*, and *Hollys*, including fifty varieties of the former and eighteen of the latter, and the weeping variety, excited particular interest.

In the borders were scores of young peach, nectarine, and plum-trees, scarcely more than three feet high, but heavily laden with the brightest colored, fair and delicious flavored fruit. These dwarf trees, scarcely as large in the stem as your small finger, were cultivated in large earthen pots, forced in the vinery and orchard house, so as now to bear the fruit at maturity sunk in the open border partly shaded.

My notice was also attracted to several vines of the *Wistaria Sinensis* now in fair blossom. It has so generally and so unusually declined to blossom in my neighborhood this year, that I was pleased to observe them.

Wodenethe is admirably sheltered by trees and shrubbery, so that I should fear that Mr. Sargent's valuable experiments as to the hardiness of the new varieties might not always be conclusive, except with similar cultivation and protection.

For instance, large specimens of the Chili Pine are here which had remained out, in warm locations, for several winters, but the soil was light ; I fear that high cultivation would have made the wood too tender, even there. The thermometer undoubtedly sinks very low every winter, so far north, and therefore the reports of experiences at Wodenethe are always looked for with much interest.

STANDARD ROSES.

So long as English gardens afford examples of beauty and cultivation for all the rest of the world, so long will the rose maintain its position as the popular favorite. We have flowers with greater brilliancy of color and chaster symmetry of form, which bloom earlier and last longer—whose value is even increased by their having no thorns ; and yet, in whatever aspect it is viewed, whether as being hardy and easily grown, or as fragrant and agreeably colored, or as handsome and beautiful in all its parts, or whether it is associated with the sports of childhood and the pleasures of old age—the rose, both of the garden and the field, has more fond admirers than any other flower either native or exotic ; the emblem of the country itself, no other flower is so fit a representative of an English garden, and no other flower has stronger claims to embellish the architecture of an English home. Since, then, the rose is so much and so justly esteemed, it is not surprising that its cultivation should be carried on to an extent commensurate with its great merits, and unequalled in any other country.

It is thought, however, that its culture as a standard has been kept somewhat stationary, and that but few persons are aware of the magnitude to which the rose may be grown, or the admirable effect which it may be made to produce on a lawn or pleasure ground ; yet with a sufficiently strong stem, and a system of careful and patient training, there can be no reasonable doubt but that the standard roses could be grown to the size and form of the ordinary examples of Weeping Ash, having the branches all produced from the top of a single stem, and flowing downwards on all sides ; thus forming at the same time an example of English cultivation, and a very ornamental object for a lawn. It may be also observed that the construction of a comfortable seat round its stem would afford a cool and fragrant retreat during the hot days of summer, so that in fact those who could not enjoy the luxury of a bed of roses might at the least have the curtains.

It is not wished to be inferred that either the Dog rose or the Manettii rose could be grown to the strength of the Ash stem, nor is such vigor necessary in a standard, trained in the manner alluded to. There does not seem, however, to be any reason for supposing that either may not be grown ten or twelve feet high, and with proportionate strength. But the chief, if not the whole, support for the head must be provided artificially, by driving down a stout stake or pole, to which the stock may be fastened, and then the branches directed downwards to small hoops of wire of any diameter, from five to fifteen or even twenty feet, according to taste. The climbing or spreading sorts of roses are of course the most suitable for growing in this form, but indeed almost any rose may be selected ; and if in the course of a few years the branches are carried out to a great radius,

some light props might be necessary to the wires at the interior. If grown simply as an object of decoration on the lawn, the standard may have a stock about seven feet in height, and the diameter of the head at the extremity of the branches may be about five feet, so that in general form it would appear like a blunt cone. But if it is desired to combine the ease of the arbor with the elegance and beauty of the tree, then it must be grown to a larger scale, and provided with a seat round the stem. In this case the branches should be trained to the ground, so as completely to conceal the interior, an entrance being left at one side. The general management of the tree when once well established, is similar to that of roses grown in the common way, and therefore need not be entered upon here.—P. F. K. (*Gardeners' Bot. Mag.*)

HOW TO BUILD YOUR COUNTRY HOUSES.

BY CHARLES DUGGIN, ARCHITECT, 532 BROADWAY, NEW YORK.

THE present number is illustrated by a design I have made for a gentleman at Flushing, L. I. It is situated on an eminence, and commands extensive views on the east and south sides.

The outline of the house is nearly square. The veranda is carried round on three sides, stopping against the dining-room projection on the west side; this projection helps to take away the square appearance of the house, and at the same time gives a good termination for the veranda. The remaining three sides of the building have the roof so gabled as to avoid the unpicturesque appearance it would have presented had the cornice been carried around straight.

To produce a picturesque appearance in designing a country house, care must be taken that the exterior be sufficiently varied in mass and detail, as to avoid as far as possible monotony of style.

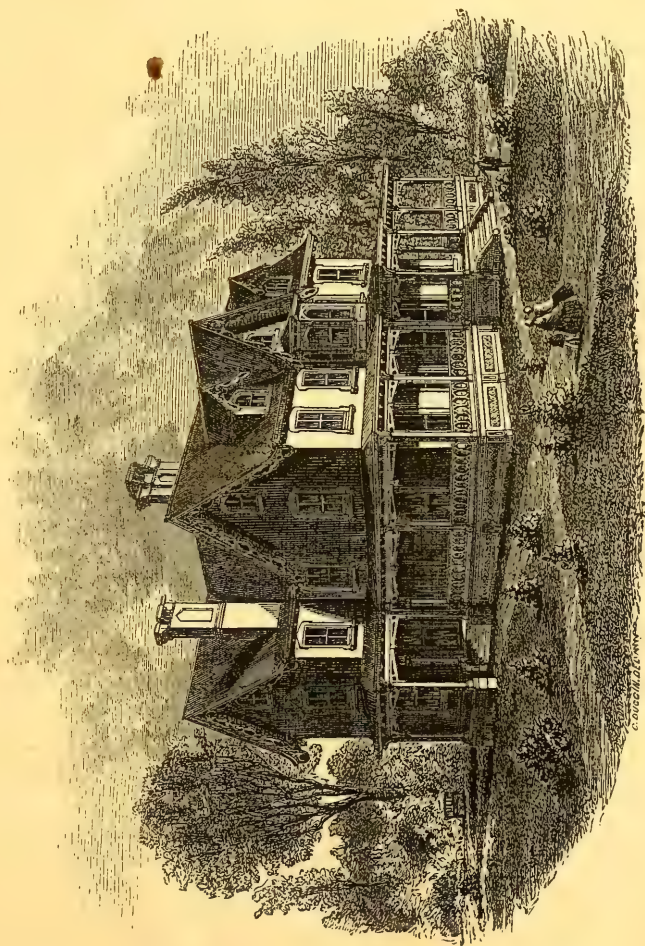
Uniformity in all the sides of a country house being adopted, the repetition becomes wearisome, and the eye loses that source of pleasurable sensation which arises from the variety exhibited in viewing an irregular and picturesque exterior from various points.

Symmetry in design may however be adopted to advantage where the house is seen only from one point of view, or in the immediate vicinity of a town; but where the house is seen from more than one point of view it should be avoided.

The Arrangement.—There are two main entrances provided, one on the east and one on the west side. The east entrance is intended for summer use,—when visitors may be mostly expected,—the door is therefore made to open directly into the reception room. The entrance on the west being more for use in winter, is provided with a carriage porch. There is also a side entrance for convenient communication with the stable and out-buildings.

The parlor is placed on the south side, and extends the whole depth of the house. There is a bay window in the centre of this front, carried up to the second story.

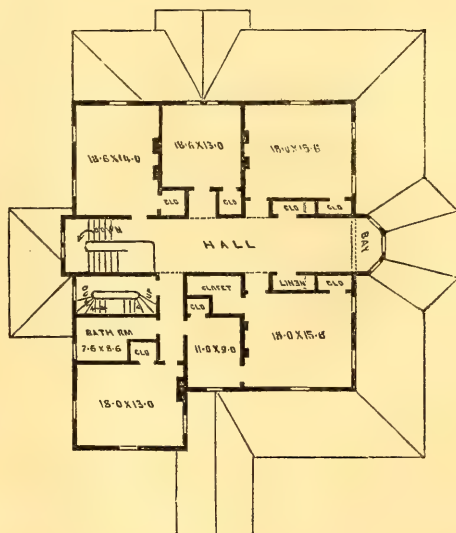
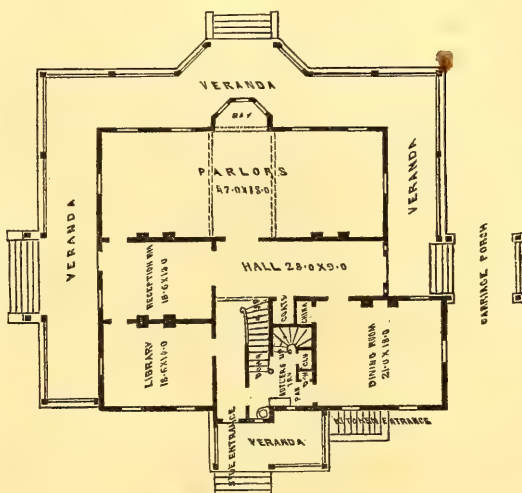
The dining-room communicates with the back stairs and butler's pantry, which is fitted up with dumb-waiter, closets, sink, and wash basin, supplied with hot and cold water. There is also provided a china closet to the



A COUNTRY HOUSE

dining-room, and a convenient place for the side-board between the door to china closet, and the door to butler's pantry. The dining-room and butler's pantry are warmed by means of a heater connected with the back of the kitchen range.

The staircase is located in a side hall, so as to leave the main hall unobstructed.



It being deemed desirable to obtain a thorough circulation of air through the house without carrying the hall through, the plan has been so arranged that by throwing open the doors of the reception room and parlor, the desired result may be obtained; which, on reference to the plan, it will be seen gives a thorough, open, and airy arrangement. And by standing in the centre of the house, a view may be had east, west, north, and south.

The kitchen is located beneath the dining-room, and is a large, well-lighted, and airy room, fitted up with dresser, sink, store-room, closets, and all conveniences. There is also provided in the basement, the wash-room, milk-room, store-rooms, furnace, coal cellar, and servants' water-closet, all well-lighted and ventilated.

The plan of the second story will show the arrangement of the chambers. All the rooms have ample closet accommodation, with drawers fitted in each. The hall is carried from north to south, the entire depth of the house, and is nine feet wide. This makes a famous play-room for children in the winter season. The bay window being continued up on this story, makes a pleasant place for sitting, as it commands an extended view. If deemed necessary, an additional room could be formed at this end of the hall.

The bath-room is provided conveniently over the plumbing below, and also in close communication with the dressing-room.

The third story has a large hall, same as on second story, and five chambers, with closets to each; and also a large store-room, and place for the tank.

There is a tower provided on the north side, over the staircase, where the projection is drawn on plans. It is not, however, seen in the view shown of the house, although forming a very ornamental feature to the building.

The height of the basement is 8 ft. 6 in.; the first story, 12 ft.; the second story, 10 ft.; and the third story, 8 ft. 6 in., at the highest part.

Construction and finish.—The outside walls of the basement are built of stone, and cemented up on the outside to keep out the dampness; the inside partition walls in the basement are of brick. All the walls above the basement are constructed of wood, the frame being filled in with an inner coat of lathing and plastering. This, to my thinking, is far preferable to brick, both on account of its cheapness and its more thorough exclusion of both heat and cold. The frame is covered on the outside with narrow rebated clapboards—the window casings being cut out of $1\frac{1}{2}$ inch stuff. The roof is covered with ornamental shingles, and all the work and materials throughout are of the best description. The rooms on the first floor have enriched cornices and panelled ceilings. On the second, the rooms have plain moulded cornices.

Cost.—The contract price for this house was \$9,900. This included the painting, drains, cisterns, and cesspools,—in fact, everything excepting the furnace, mantles, grates, and plumbing. The building, occupying 105,000 cubic feet of space, brings the cost per foot to nearly $9\frac{1}{2}$ cents, (see page 504 of last volume.) The cost of this house could be reduced without materially affecting the convenience, by leaving off the tower and carriage porch, and otherwise simplifying the details of both outside and inside finish.

THE NEW VENISON.

THE splendid parks of England have always been one of her most striking features in the eyes of continental visitors. Glorious in their hill and dale, their ferny brakes, their rich pastures, their rivers, and their mighty trees—relics, some of them, of primeval forests which have passed away—they present unequalled sanctuaries for beasts of the chase, and the multitude of our game is as characteristic as the localities in which they live. Here roam the fallow deer in such herds as can be seen in no other land. Here sometimes, too, as we see them at Windsor, the stately heads of the red deer tower above the dappled, silver-grey, or dark, dun hides of the smaller species—more frequently, however, living apart in a district of their own. And to these two species of deer, with the pheasant and the ordinary game of the country, the population of our parks is limited. But the fallow deer and the pheasant are acclimated animals—the latter being, in many parts of England, and everywhere in Scotland, of comparatively recent introduction. And if the fallow deer and pheasant have been acclimated so perfectly as to live under precisely the same conditions as if they were indigenous, why should not our catalogue include as many of the deer, and as many of the game birds of the temperate regions of the whole earth, as their individual beauty or quality for the table may make desirable? There is no reason to the contrary whatever. The owner of any deer-park in England may, if he chooses, have the luxury of at least a dozen species of deer and antelopes to adorn its glades; and every covert may have among its denizens, according to the capabilities of soil and aspect, three or four varieties of American or Asiatic winged game, in addition to the universal pheasant and the migratory woodcock.

In the park at Melton Constable, Lord Hastings has a herd of Canadian wapiti, rapidly increasing in number, a herd of Indian nyghaus, and a herd of the little Indian hog-deer. The Indian axis succeeded perfectly some years ago in Somersetshire; and the Earl of Ducie found no difficulty in breeding the magnificent Persian deer (*Cervus Wallichii*) at Tortworth, which he subsequently presented to the Zoölogical Society. The herd of Barbary deer at Hawkestone are already thirteen in number, bred from animals which Viscount Hill purchased at the dispersion of the Knowsley collection in 1851; and in an adjacent part of the park the Ceylonese sam-burs will, in a few years, be equally numerous.

The Zoölogical Society have another species—which, with moderate success, will soon be available also—more brilliant than any yet named, and probably of first-rate quality as venison. This is the Indian barasingha (*Cervus duvaucellii*), of which a fine male was fortunately sent to them in 1857, by the Baboo Rajendra Mullick, a wealthy gentleman of Calcutta, who takes great interest in zoölogical pursuits, and is possessed of a large collection of Asiatic quadrupeds and birds. The barasingha carries a magnificent head when adult, and has a lustrous golden summer coat, which in the rich green of an English park would produce the most picturesquely beautiful effect that can be imagined. Asia yields other noble species which are equally well calculated for a European existence. There is the great shou of Thibet, so near the wapiti in size that at one time it was supposed that the great American species actually existed in both hemispheres. There is the hunghul, of Cashmir, of which Colonel Markham, and more

recent sportsmen, have brought home splendid trophies. There is the whole group of Rusa deer, which, although natives of more southern regions, adapt themselves with singular facility to the vicissitudes of our climate. And if we turn to America we have at once half a dozen species of another most graceful form, of which the obvious distinctive character is the absence of brow-antlers and the forward direction of all the other points. With such animals as these, acclimation is comparatively easy, but there are many others to which the same operation may be extended with perfect success; and the Société Imperiale d'Acclimation, in Paris, is on the point of establishing a great vivarium in the beautiful Bois de Boulogne, as a centre from which the experiment may be made in France.

This interesting question has very recently been brought to a practical test which deserves to be recorded. And the successful essay having been made, not with a North American or North Asiatic species, but with an antelope of the South African wilderness, the difficulties were necessarily much greater than those which would have to be provided against in the hardier deer to which we have alluded. On the 7th of January, the first eland (*oreas canna*) killed for the table, and bred in England, fell at Hawkestone Park, in the county of Salop. He weighed one thousand one hundred and seventy-six pounds as he dropped, huge as a short-horn, but with bone not half the size. Active as a deer, stately in all his paces, perfect in form, bright in color, with a vast dewlap, and strong, sculptured horns, the eland in his lifetime strode majestic on the hill-side, where he dwelt with his mates and their progeny, all English-born like himself. And of these three pairs remain, roaming at large along the picturesque slopes throughout the day, and returning to their home at pleasure. Here, during winter, they are assisted with roots and hay, but in summer they have nothing but the pasture of the park; so that in point of expense, they cost no more than cattle of the best description. All travellers and sportsmen agree that in the quality of his flesh the eland is unapproached by any ruminant in South Africa—that the males grow to enormous size, and lay on fat with as great facility as a true short-horn, while in texture and flavor they are infinitely superior. The experiment which has been tried at Hawkestone proves that in this climate, under circumstances not particularly favorable, the eland maintains much of the renown which is accorded to him as a *pièce de resistance* in the wilderness. The texture of the lean is remarkably fine, the fat firm, delicate, and characteristic. In all the joints great juiciness was developed, and, no doubt, as a foundation for sauces and for game soups, eland will hereafter rank among the choicest elements, in addition to its undeniable superiority as a meat.

The antecedents of the herd of elands at Hawkestone are interesting. The idea of acclimating the eland in England is due to the late Earl of Derby, who, between the year 1835 and the period of his death in 1851, accumulated an immense collection of living animals at Knowsley. Some notion of the extent of his labors in this way may be inferred from the fact that nearly one hundred acres were devoted to this purpose, while the whole area occupied by the Zoölogical Gardens in the Regent's Park only includes twenty-six acres and a half. In Gleanings from the Menagerie at Knowsley Hall, a privately printed work, Lord Derby has recorded that in November, 1842, he received two male elands and a female, which were then for the first time brought alive to Europe. This female produced seven

ral calves, beginning to breed in 1844, but of all her stock only one was of her own sex, and she herself, with the males, having died off in consequence of being fed on land newly laid down in grass, it at last happened that this female (calved in 1846) was the only survivor. In 1851 a fresh supply of elands was obtained from the Cape of Good Hope, but in the summer of that year Lord Derby died; and, having been President of the Zoölogical Society for upwards of twenty years, it appears that he bequeathed to them his reconstituted herd, consisting of two males and three females, as a last proof of his regard for the institution, which had then been restored to the prosperous and effective state in which we know it. In the Zoölogical Gardens the elands have occupied a conspicuous place, and form a characteristic feature in the African quarter, where they are associated with the giraffes, hippopotamus, leucoryx, and ostriches. Here the elands have been treated with extraordinary success; and, from the year 1853 to the present time, the females have regularly and without intermission reproduced, without any accident, or the loss of a single calf.

The first English proprietor who was prevailed on to relieve the Society of their surplus stock was Viscount Hill; and, in the spring of 1855, a male and two females bred by the Society became his property, and were transferred to Hawkestone. The result of their establishment there has been a perfect success, as four calves have been born; and the six-year-old male has, in consequence of this increase, been now made available for gastronomic purposes. In every shape in which it has been tried—braised brisket, roasted ribs, broiled steaks, filet sauté, boiled aitch-bone, etc.—the fine texture and juiciness of the flesh have given ample proof that a new meat of surpassing value has been added to the products of the English park. And although Viscount Hill has been the first to prove this fact, the experiment is not confined to Hawkestone alone,—the Marquis of Breadalbane having established three animals of the same species at Taymouth, which will begin to reproduce in the approaching spring, and the last pair bred by the Society having been placed by Mr. Tatton Egerton, M. P., in his noble park at Tattan, in Cheshire. Since the five elands bequeathed by the Earl of Derby passed into the possession of the Zoölogical Society, twenty-one calves have been born from them and their produce; and at least five more may be calculated on during the current year. It is much to be regretted that six of the earliest of the eland calves were allowed to leave this country; but now that the acclimatation of this noble antelope is a demonstrated fact, and its merits known, there is no doubt that effective measures will be taken to secure the most rapid extension of the existing number.—*London Saturday Review*.

[We have waited for the agricultural papers to publish the above, but as it has not met our eye in any of their pages we transfer it to our own. If we were to designate any State for a trial of the new venison, it would be Kentucky.—Ed. H.]

ACHIMENES CANDIDA.

PRESENTED to the Society by G. U. Skinner, Esq., in the spring of 1848, and said to be from Guatemala.

From a foot to a foot and a half high ; stems purplish, nearly smooth, with a few scattered, spreading hairs near the upper end ; leaves about four inches long ; flowers about half an inch long, with a yellowish tube, and a white, flat, oblique limb, with a short line of purple dots along the



middle of each lobe except the frontal one, and many more within the tube. Generally three flowers appear together, of which the central ones open first and the side ones some time afterwards.

It requires the same kind of treatment as the other sorts of *Achimenes*. Being a neat, free-blooming plant, it is worth cultivation on account of its white blossoms, an unusual color in the genus.—*Horticultural Society's Journal*.

 GRAFTING THE GRAPE-VINE.

THERE is no fruit tree cultivated under glass of so much importance as the vine, nor any so useful for the dessert. Pine-apples, although expensive, owing to the amount of fuel which they require, are less esteemed by most persons. Peaches and nectarines are admirable and delicious when brought to perfection ; but they are soon over, unless forced in successional houses. From one grape house, however, a long supply for the dessert may

be daily obtained, with proper management and a judicious selection of sorts.

But it frequently happens that in houses of well established vines there are sorts for which it would be desirable to substitute others. A set of young vines, raised from eyes, if planted in a fresh made border will soon fill a house; but the rooting up of an established plant from amongst others, and planting a young one in its place, is in some respects an objectionable proceeding; for the roots of those intended to remain are liable to be injured, or otherwise they take possession of the newly loosened soil prepared for the young plant before the latter is itself able to do so. In order to avoid these inconveniences recourse should be had to grafting, which will be found the best mode of substituting for any existing sort one that is more desirable. As regards the vine, however, the principle of this operation is not, generally speaking, so perfectly well understood as it ought to be. It is very simple; but many failures, with considerable loss, and disappointment, have been the result of not knowing it. It consists in *performing the operation when the vine is in active growth, and can be cut without bleeding*. If this is attended to, any of the usual modes of placing the scion in contact with the stock will succeed, such as whip, cleft, or saddle grafting; but a certain failure will be the result of every mode if performed when the vine is in a bleeding state.

Mr. Knight states in a paper read before the Horticultural Society, in 1821, that "The practice of grafting the vine appears to be very ancient; for it is mentioned both by Cato and Columella in a way which shows that it was common in the vineyards of Italy at the period in which they wrote. It must consequently have been an operation of easy execution though it is rarely seen to succeed well in the hands of the modern gardener, who is, nevertheless, certainly much better provided with instruments, and can scarcely be supposed to be inferior in skill or science to the cultivators of that period. It is therefore probable that the ancients were acquainted with some mode of operating, of which the modern gardener is ignorant. It is well known that the ancients in propagating the vine, employed cuttings which consisted partly of one-year-old and partly of two-year-old wood." Mr. Knight conceived it probable that the success of the Roman cultivators in grafting their vines might have arisen from the selection of grafts similar to their cuttings. He therefore selected scions consisting of about 2 inches of old wood and 5 inches of annual wood. With these he was successful; but the condition of the vine as regards its vegetation is not stated. It is, however, evident that if he had known the simple principle to which we have as above directed attention, he would have at once expressly and clearly pointed it out. Instead of ascribing his success to the circumstance of employing a portion of two-year-old wood, he could have stated that with scions of one-year-old wood the chances would be that not one in 20 would fail, especially in the hands of so practised an operator as Mr. Knight was known to be. This great physiologist, however, in 1832, pointed out the right principle in the analogous case of grafting the walnut-tree.

So far as we are aware the credit of first discovering and explaining the essential principle for the successful grafting of vines is due to the late John Braddick. In a communication from that gentleman to the Horticultural Society in 1822, and which was published in the "Transactions of the Society," details of experiments are given which render evident the cause

of failure, and likewise the principle according to which success in vine grafting is ensured. Believing that many of our readers would profit by an account of these interesting and conclusive experiments, we give the following extract from Mr. B.'s communication.

"The information which I collected from books on that subject was, that vines may be easily made to grow by grafting; and that the proper time for performing the operation was in January and February, for vines growing under glass; and in March for vines growing in the open border. But out of 40 or 50 vines which I operated upon in the above months, I had the mortification to find that very few of the grafts grew, and those which did take became weakly plants.

"I observed that the stocks of the vines grafted as above mentioned all bled profusely, and upon unbinding those grafts which did not take, I found that the parts of the grafts which joined to the stocks were sodden and turned black, by their being steeped for a considerable time in the thin sap of the stock.

"To stop the bleeding I tried every experiment with styptics, cements, etc., which I ever heard of, with many others suggested by my own imagination, but all without effect. One experiment I will mention, as it may serve to show the great power of the rising sap of the vine while its buds are breaking. On March 20, in the middle of a warm day, I selected a strong seedling vine five years old, which grew in a well-prepared soil against a south-west wall; I took off its head horizontally with a clean cut, and immediately observed the sap rising rapidly through all the pores of the wood from the centre to the bark. I wiped away the exuded moisture, and covered the wound with a piece of bladder, which I securely fastened with cement and a strong binding of waxed twine. The bladder, although first drawn very close to the top of the shoot, soon began to stretch and to rise like a ball over the wound; thus distended, and filled with the sap of the vine, it felt as hard as a cricket ball, and seemed to all appearance as if it would burst. I caused cold water from a well to be thrown upon the roots of the plant, but neither this nor any other plan which I could devise, prevented the sap from flowing, which it continued to do with so much force as to burst the bladder in about 48 hours after the operation was performed; the weather continuing the whole time warm and genial.

"I now fitted a graft to this stock, and after binding it on, I took a piece of bladder doubled, and made a small hole in it so as just to let the tip of the graft and the eye pass through the hole; the inside of the bladder I covered with a cement made of bees-wax, resin and tallow, and bound the whole with strong waxed twine from just under the eye of the graft to 6 inches below on the stock. The sap, having now no other way to escape, was forced up through the pores of the graft; in a short time I was pleased with observing the bud of the graft swell, and when the other vines on the same wall began to grow it broke, and made a shoot with several joints. It however soon became evident that no union had taken place between the graft and the stock, as the shoot of the former turned sickly, and before midsummer died entirely away.

"The next season I took a healthy growing vine in a pot, and carefully matched it with a seedling vine of the same size, growing in the open ground; these I inarched together, and bound a bladder round the wound instead of using cement. Upon cautiously removing the bladder at different

times, I found that both the vines bled profusely, and no adhesion began to take place until they had both shot out four or five joints from each of their eyes; the bleeding then ceased, as I judged, by the sap becoming more glutinous.

"It consequently now occurred to me that the proper time for cutting off the heads and grafting of vines, without the danger of their suffering through bleeding, was when they had reached that period of their annual growth at which the sap ceases to flow thinly and rapidly. I accordingly cut the branches of several in that state, and grafted them with cuttings of the preceding year; all these grew; the operation was performed by whip-grafting, and no other covering was used than a binding of bast surrounded with grafting clay.

From these and various other experiments which I have since made, I feel confident in stating that healthy vines may be successfully grafted with young wood of the preceding year's growth from the time that the shoots of the stocks which the grafts are to be put upon have made four or five eyes until midsummer; with every prospect of the grafts growing, and without the least danger of the stocks suffering by bleeding.

"Some cuttings of vines sent from Madeira which I received from the Horticultural Society were grafted on the 10th of May by me on seedling vines which were growing under glass, but without fire heat, with the following results:—

"The *Verdelho* shot 14 feet, produced one small bunch of grapes, and ripened its wood well.

"The *Negro Molle*, grafted on the same stock, shot upwards of 12 feet, produced no fruit, but ripened its wood.

"Another graft, of which the name was accidentally lost, was not put on till the 1st of July; it was then worked on the top of a young shoot of the same summer's growth; this has also grown and ripened three eyes of its wood."

From the above experiments it is evident that by grafting the vine when its state of vegetation is such that bleeding ensues, the consequence is complete failure; on the contrary, when the operation is performed after the buds of the vine have burst into leaf, when no bleeding takes place, the flow of sap being then readily taken up by the foliage, complete success is the result; and this, to the best of our knowledge, was first clearly pointed out by M. Braddick, in the above communication.

About the year 1834, Mr. William Gowans, Cadder Garden, near Glasgow, was very successful in grafting vines, of which he produced a proof by exhibiting a bunch of grapes from a strong, vigorous, well ripened shoot 22 feet long, from a graft of the same season. His plan was wedge-grafting, and, as stated in the Transactions of the Horticultural Society, second series, vol. II. p. 114, no fewer than 22 out of 23 grafts were attended with decided success. He selected for a scion a portion of the preceding year's shoot with one eye, and cut it into the form of wedge; a shoot of similar age and thickness was split down the middle, and both sides thinned to fit the wedge-shaped portion of the scion, which was inserted with its eye opposite to that on the top of the stock; then tied and clayed over, leaving a hole for the bud. We have found, however, that whip-grafting answers quite as well, and in many cases is to be preferred. After describing his mode of operation, Mr. Gowans adds, "What I thought, and still think of

essential importance to success in this mode, is to leave the eye or young shoot on the top of the stock, and allow it to grow for a few days, when it should be cut off, leaving only one eye and one leaf to draw sap to the scion, till it be fairly united to the stock.

"With regard to the time for grafting I find it will succeed pretty well when the stocks are about to break into leaf. But I think there is more certainty of success when the shoots of the stock, into which the grafts are to be inserted, have made 12 or 15 inches of new wood. For instance, the grafts which I made on 25th February this year have not broken so freely, nor yet advanced so far, as those grafted a month after when the stocks had made 15 inches of new wood: by this time the sap has begun to flow freely (into the leaves), and the danger of the stocks suffering from bleeding is over."

In the "Reports of the Fruit Committee of the Horticultural Society," there is an account of a vine having been very successfully grafted after it had come into leaf, by Mr. Spary, of the Queen's Graperies, Brighton. For a Trebbiana in a bearing state a Muscat was desired to be substituted on the 1st of April, 1858, the Trebbiana being at that time in full leaf; it was cut off rather more than 2 feet from the ground, a cleft was made in the top of the portion of stem left, and in this cleft was inserted, on the one side, a scion of the Muscat, and on the other one of the Golden Hamburgh. The former grew to the length of 18 feet in the same reason; its girth measured very nearly $3\frac{1}{2}$ inches; and it also bore fruit.

From what we have stated, the cause of failure in vine grafting will be fully understood, and therefore can be easily avoided in future. There is in fact as little difficulty in successfully grafting the vine as there is in grafting the apple or pear; and any one who wishes to substitute one sort of vine for another may do so without the risk of disappointment. He may cut back at the winter pruning to where he wishes to graft, or he may wait till the vine is in leaf; in either case allow the uppermost shoot on the part left to push, say 6 or 8 inches, place the graft by whip-grafting opposite that shoot, which may at the same time be stopped; bind the stock and scion together with matting, surround with clay, and over this some moss which should be kept moist. Finally, cut back the shoot left on the top of the stock to one leaf as soon as the graft begins to push.—*T., in Gardener's Chronicle.*

MANAGEMENT OF BOUVARDIAS.

It is singular that a family of plants so rich in color as this is should not have been, until recently, more generally cultivated, for certainly a more gorgeous bed for the flower-garden, than one produced by a few dozens of Bouvardias planted side by side, it would be difficult to imagine. Years back, in some old gardens in the north of England, Bouvardias used to be seen in great abundance, and presented splendid masses of color in the old mixed borders, and also as pot specimens for the greenhouse stage. They are propagated with great facility, both by cuttings of the young wood and by pieces of the roots cut into lengths of one inch each. In both cases the cuttings should be placed in a gentle bottom heat, and those formed of the young shoots must be kept tolerably close. When they have grown to

the length of one inch, pot them singly into small pots in a light rich compost, and nurse them with care until they are established. Old plants, while in a dormant state, may also be increased by divisions of the plant, as each shoot with a root to it will make a plant. Plants so obtained, or from cuttings of the previous year, are the best for planting out in the flower-garden, as, if they are not strong, they rarely flower satisfactorily. The proper time to divide the old plants is in March; each part should be potted in rich light compost, such as loam, leaf-mould, and rotten dung, and they must then be placed in a forcing-house or hotbed to induce them to start vigorously, and until they are thoroughly established. Afterwards move them to the air, so as to get them thoroughly hardened by the time they are planted in the garden in May. The soil in which they are planted should be rich, deep, and well drained, and the situation must be rather sheltered. During the winter the plants may be kept dry under the greenhouse stage, or in a shed or cellar.—*London Florist*.

MAGNOLIA CAMPBELLII.*

It is not our intention to compare what we know of cultivated Magnolias, with the magnificent plant shown by the illustrations of Himalayan plants from Messrs. Hooker, Son & Thomson. But before entering upon our subject we cannot forbear introducing a remark. We have cultivated two years a hybrid Magnolia, called Lenné, entirely native, whose bright color struck us particularly, when we saw its flowers for the first time; what then will *this one* be? what an impression will be made by the first flowering of the magnificent Magnolia Campbellii. What would not some give even to see it, or have it for *one day* a prisoner in their orangeries!

"This superb tree has been chosen by Dr. Thomson and myself," says Mr. J. D. Hooker, "to perpetuate the services which our friend Dr. Campbell has rendered to our inhabitants, in the foundation of a hospital, now in great repute, and to thank him for the large share he has taken in the various researches calculated to throw light upon geography, natural products, arts, manufactures, and the races of Nepaul, &c. The M. Campbellii was discovered in Bootan, by Dr. Griffith. It is a large forest tree that grows on the outer chains of Sikkim, at an elevation of 8 or 10,000 feet. It is not often found at the same elevation on the central chains. Its trunk is upright, and covered with a black rind, and often grows eighty feet high; its wood is tender, and of little value. In April, the tree is profusely covered with flowers, to the end of its branches, before the leaves appear. The flowers, with little smell, are of various shades; white, deep rose, scarlet, and generally six, eight, and ten inches in diameter. In the month of May, it is in full verdure, and the fruit ripens in October, when it produces more flowers, but smaller, and often imperfect.

The plants while young have smooth glossy leaves, but when older, the under sides become more and more downy.

India possesses two other species of this genus, of which one, the M. globosa, which heretofore was only found in the interior of the valleys of Sikkim, on the edge of the forests, at an elevation of 9 and 10,000 feet.

* See Frontispiece.

The latter is comparatively a small tree, with caducous leaves, round flowers, of the size of one's fist. Its leaves usually make their appearance with the flowers, which then embalm with their perfume the delicious evenings of the month of June. This Magnolia is nearly allied to the Japanese species, or the *M. conspicua*, cultivated in our gardens. A third species, exclusively Indian, is the *Magnolia sphenocarpa* (Roxburgh, *Coromandel Plants*, Vol. III, p. 266). Its native home is the sub-tropical valleys of Chittagong, in the mountains of Nepaul.

The *M. Campbellii* and the *M. globosa*, perhaps will be naturalized in England; the *sphenocarpa* will bear a quasi-tropical climate."—*Revue Horticole*.

NOTES ON NEW AND SELECT BEGONIAS.

BY DANIEL BARKER, WEST MERIDEN, CONN.

BEGONIAS are fast becoming universal favorites, and most deservedly so, for wherever floral beauty and handsome foliage are required, it is combined in this genus to a remarkable degree. The Begonias, within the last few years, have been rising in estimation with all lovers of fine flowering and handsome foliaged plants, which is partly due to the introduction of many charming species from abroad, with many fine hybrids—the result of the European “hybridists.” The genus is likewise remarkable for the profusion and long continuance of its blossoms, there not being a day throughout the year but some of them may be seen flowering or producing their fine and elegant foliage in the greatest perfection.

The following fine species and varieties are now introduced and growing in this country; they promise to be a fine exhibition of themselves, during the ensuing winter months.

Begonia Mosacea—This beautiful species was introduced from the western Cordilleras, of Columbia, by that indefatigable collector, M. Triana, to Brussels. It is a tuberous-rooted kind, with fine foliage and large blossoms of a fine rose color.

Begonia Multifolia—A very beautiful species discovered by M. Bonpland and Humboldt, on the mountains of Quindin; the flowers, which are pure white, are produced in the greatest profusion for several months.

Begonia Oipusifolia Miniata—A charming hybrid obtained by crossing *B. Oipusifolia* and *Miniata*; the result of which was the bright and beautiful flowers of the latter upon large umbels like the former.

Begonia Oipusifolia—A beautiful and distinct species, producing large clusters of pure white flowers, which are produced in great profusion for months in succession.

Begonia Griffithii—A most beautiful species from Bhotan; the leaves upon young plants, are obliquely cordate, and which I think will be large when fully developed; the ground color is a deep rich green, very handsomely variegated; the centre and margin a deep red with a pale green band between them.

The above description is taken from quite young plants when fully developed; I think this will not only prove a valuable acquisition, but one of the most beautiful of all this popular tribe.

Begonia Hydrocotyfolia Manicata—A very interesting and beautiful variety of a close growing habit; the foliage of which is round, large, and beautifully mottled, with spikes near two feet long; of rose-colored flowers, one of the very handsomest winter-flowering kinds.

Begonia Wagneviano—A fine species from Venezuela; very free flowering; growing from one to two feet high; the male flowers are pure white borne on small panicles.

Begonia Herallifolia var. *Nigricans* (Syn. *B. Punetata*.)—A fine winter-flowering variety, the flowers of which are borne on large panicles nearly white, the wing of the seed-pod rose-colored with the seed-pods a light green, forming a very pretty and delicate contrast; the foliage, which is palmate, is beautifully blotched with black on the margin of the lobes.

Begonia Muroptera—The flowers of this species are borne on a close, terminal panicle, of a bluish white, with yellow stamens; the foliage upon the under side is beautifully and very prominently marked with red on the veins.

Begonia Rex—One of the most beautiful of the genus; the surface of the leaves is of a purple-tinted olive green in the centre, and for about an inch wide at the margin, with a broad band of silver green intervening and extending to the point. This highly beautiful kind is not only most early, grown into a fine specimen, but one of the most early propagated.

Begonia Tumaitesii—A very compact growing variety with beautiful foliage of a purplish green and crimson, richly blended, clothed on both surfaces with reddish purple velvety hairs, and blotched with white on the upper side; the delicate white blossoms suffused with red, form a beautiful contrast with the darker color of the leaves.

The description of the last two are taken from that magnificent work the "Illustrated Bouquet," which agree in every particular with new plants now growing.

GRAPERIES AND GRAPE GROWING.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

In the March number of the *Horticulturist*, for 1858, I described a system of building glass-houses on the fixed-roof, or continuous-rafter principle. Having, since then, had several houses put up on a different method, and one which is in some respects superior to that already described, I have prepared the following sketches of construction for the benefit of those who are contemplating building. For Orchard houses or, indeed, any kind of structure for plants, I consider that it will form the most eligible combination of advantages.

Fig. 1, shows a portion of the front elevation;—*a a* are 3 by 6 inch rafters which are the main roof supports; these are tied together as shown by the cross-piece *h* in fig. 4. They are set $7\frac{1}{2}$ feet apart, and are rebated on the edges to form a glass-bed; *b b b* are cross-pieces made of inch plank 3 inches wide, inserted between the rafters, so that their upper edge will be one and a half inches below the upper edge of heavy rafter. These support the sash bars *f*, of which a full-sized section is shown at fig. 3; *d* is an inch board 14 inches wide, let $1\frac{1}{2}$ inch into the rafters so that it is flush with the glass-bed, projecting so as to form an eave to throw off water. The sash bars butt against this board, and the glass laps over it,

forming and neat a tight finish. In glazing the glass is merely bedded in putty,—none used outside ; *e* shows how the ventilators are situated,—they are hinged at top, and worked from the inside by an upright rod ; the up-

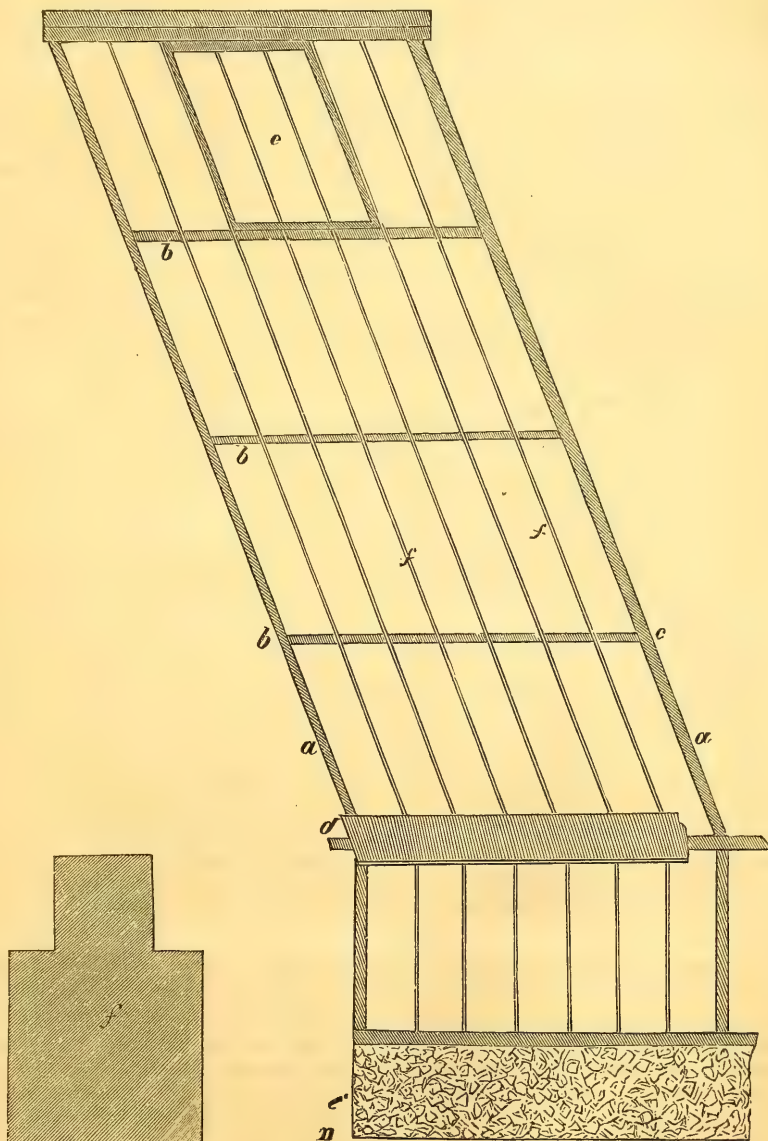


FIG. 3.

FIG. 1.

right elevation is constructed in a similar manner as the roof, and portions of it may be hinged to the wall plant for ventilators.

Fig 2 is a section across *b, c* in fig. 1.

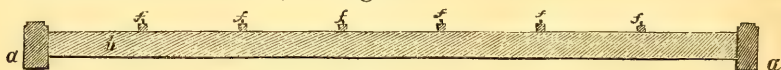


FIG. 2.

The letters in the figures have reference to the same parts in all. Fig. 4 is a section of a graperies built on this system, showing the walls, border, etc. The dimensions of this house are, width 28 feet, and 15 feet in height from level of sill. The stone walls *ii* are 6 feet in height; 2 feet above the outside ground level, and 4 feet foundation. The centre posts are set upon piers; in houses of less width, these centre supports may be dispensed with, if the upright corner posts are well braced to the sill.

Fig. 4 is introduced more with a view to show the peculiarity of treatment both of the border and plants, than as illustrative of the construction of the house. *N* is the outside ground level; *k*, a stratum of coarse material for drainage; *m* the undisturbed subsoil, and *b* the prepared border. The soil in

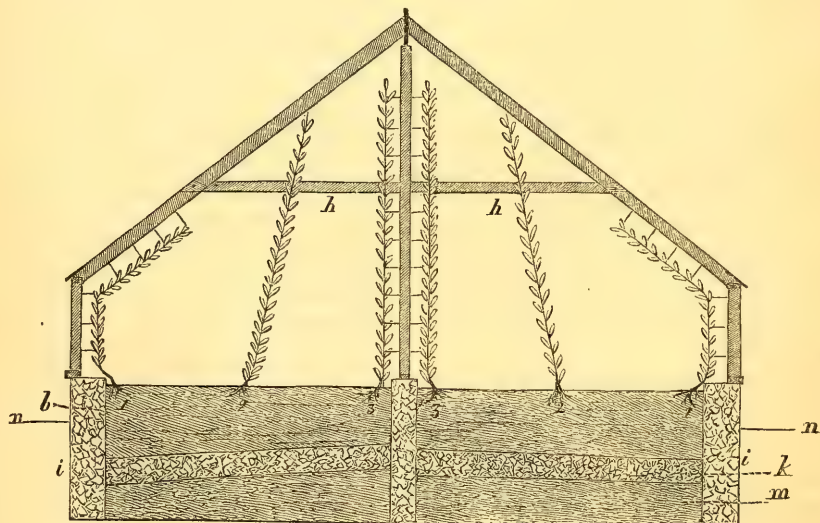


FIG. 4.

this border was taken from a corn-field and a considerable portion of sand mixed with it, so as to render it perfectly pervious to water. No manure of any kind was used in its formation, all necessary stimulants being applied in a liquid state when found requisite. The plants so far have made very satisfactory progress,—not so strong and luxuriant growths as are sometimes produced in rich borders, but sufficiently vigorous to perfect good crops. Borders made up with a large portion of decomposable material, excite a luxuriant growth which is seldom maintained for any considerable number of years; the organic matter in the soil decays and its texture becomes sodden and compact. A border made as described above will always present a

suitable medium for the ramification of roots ; and as already remarked, stimulants can be applied at any time when the plants most require it.

Borders.—It will be perceived that there is no outside border.

One of the greatest difficulties in the management of vines under glass, when the roots are outside borders, is their tendency to prolonged growth in the fall. The heavy autumn rains on the soil, combined with the warm, growing temperature in the house, prevents the thorough maturation of the shoots, and they remain in active growth until suddenly denuded of foliage by frost. Various precautions are adopted to guard against this evil, such as covering with leaves, manure, and occasionally with glazed sash, or boards. I have obviated all this by having no outside borders, so that the roots are as completely under control as if the plants were in pots.

It may be surmised that such a small portion of soil would rapidly become exhausted, and unable to support a crop; but when we consider the heavy crops that are produced in pots we need have no fear on that score. I am convinced that extensive rich borders are not only unnecessary, but absolutely injurious so long as we do not provide for a corresponding extension of the branches. In the limited extent of a rafter in a grapery, the plants, at least after the first season's growth, are continuously subjected to a severe pinching process in order to keep anything like regularity.

A proportionate amount of foliage is indispensable to the ripening of a crop, and where there is not sufficient space to grow it, we must expect red grapes when they ought to be black.

Among the many reasons given for the non-coloring of grapes, the want of foliage has never been considered as a cause. We are very apt, in our attempts, to discover causes, to ignore anything likely to interfere with our routine practice, or infringe upon a favorite system. How often has it been advanced that it is fatal to allow grape-vines to bear any fruit the second year from planting, even although the plants are strong enough to warrant the ripening of a few branches; and, in cases where it has been allowed, subsequent failures have been attributed to that circumstance. Experience convinces me that the fruit produced on such occasions will invariably be found of the very best quality, fully flavored and matured ; and this not so much on account of supposed superior management, but from the fact, that in order to fill up space, a certain freedom of growth is allowed, furnishing a sufficient amount of foliage to thoroughly mature the crop. But when once these same plants have filled their allotted space, and no room for further extension is provided, the pruning and cutting that they have to be subjected to during growth, diminishes the foliage to such an extent that they cannot perfect an average crop; and instead of attributing the failure to its proper source, the fact of failure will be held up as illustrative of the evil effects of early cropping, with which, it indeed, has not the most remote connection.

Training.—I have frequently expressed my conviction that the European method of training grapes in houses is not the best system for this climate. When the vines are tied to trellises as sloping as the roof, the fruit hangs down clear of the foliage, and is much more liable to be affected by atmospheric changes, such as currents of air, condensation of moisture, etc., than when protected and partly covered by the foliage as occurs when trained to perpendicular trellises. The row of plants marked 1 in fig. 4 is confined to about one third of the roof; the glass above this point will throw sufficient

light for rows 2 and 3, the former of which I consider to be placed in the most favorable position for cropping. By this disposition a large training surface is gained, and more fruit may be gathered under a given surface of glass than by the common mode of trellising the roof. A house built on the ridge-and-furrow principle, covering a large surface without being more than 10 feet high at any point, and the vines trained in row to horizontal trellises, would, I conceive, be an admirable arrangement for a grapery.

Pruning.—The vines are planted about $2\frac{1}{2}$ feet apart. The object in planting so closely is to cut down each alternate plant yearly, so that while one half only are fruiting, the others are producing a shoot for fruiting the following season. The advantages of this method are various. In the first place, it is well known that the best fruit is produced from young, healthy growths, both with native and foreign grapes; then the fruiting plant can be treated so as to concentrate its vigor into the crop, and the wood managed without reference to its future arrangement seeing that it will all be removed in the winter pruning. Another important consideration is its adaptation to this system of training;—the lower portion of the central rows is a considerable distance from the glass; the consequence would be that in a few years the top portion only would fruit; but this is obviated by taking up young canes annually, and if properly managed during growth, they will fruit equally over any portion of their length.

CULTURE OF THE YUCCA.

[Translated from the *Revue Horticole*.]

It is unnecessary to insist anew upon the beauty and ornamental merit of the yucca, but it may be useful to encourage its culture and make known the means by which it is multiplied. To accomplish this result, previous study is needed:

All the yuccas are long-lived, and originally from North America; some species grow in the warmest parts of this continent, such as Carolina, Virginia and Florida. Those species, of which the yucca-draconis or dragon-yucca, is one, and some others of uncertain name, object to cold ground, in countries where the thermometer in winter is below 4 or 6 degrees. To this limit, yuccas may in general thrive in the open air. When the temperature is much lower, without being destroyed, they "suffer," as the gardeners say; the ends of their leaves blacken and dry up, which of course injures their beauty. It is then prudent, when they are in the open air, to cover them with glass.

Yuccas are monocotyledenous, that is to say, plants budding with one cotyledon, as wheat, maize, iris and onion, etc.; their mode of growth is peculiar. The vegetation may be said to be double; aerial and underground. Above-ground it grows from the terminal bud, so that when this blooms, it naturally follows, that the elongation of the stem is stopped. However, the under-ground buds profit by the arrest of the aerial part, push forward their buds already formed, and hasten to throw out leaves above soil. It is not only under-ground that the new growth shows itself, but around the flower stem. When the climate will allow caulescent species, these and some others, variously divided, present a picturesque appearance.

While the upper eyes are developed, here and there buds are seen on the stalk, showing latent ones which the arrest of the terminal bud affords an opportunity for development.

Nearly all soils, provided they are not very compact, will suit yuccas, since these plants are generally vigorous; nevertheless, whenever a silicious earth, rich in organic matter, can be given it, its vegetation will always be more beautiful. For all delicate species, this is an indispensable condition. Some others, such as the *yucca gloriosa*, and its numerous varieties, even the *yucca flaccida*, can easily accommodate themselves to good garden soil. An essential condition to ensure good vegetation, and the preservation of yuccas, is that the soil, in which they are planted, be rather raised than low, or else it must be well drained so that the water can easily run off.

Although yuccas bear dryness very well, frequent and copious watering during the height of its vegetation, will be very favorable to them, and their development will be sensibly improved by it.

If what has been said above upon the mode of vegetation of the yuccas is understood, it will be easy to understand the mode of culture suitable for them. The propagation is done in two ways: by the buds produced above-ground, and by the *turions*, which are in fact nothing but buds in a less advanced state of development. The buds detached and nicely trimmed are put into pots with silicious soil, and as new as possible. The *turions* treat in the same way. However, it is better to leave these on as long as possible.

NOTES ON NEW AND SELECT PLANTS.

AGAVE MACULOSA. Nat. Ord. *Amaryllideæ*.—A new dwarf species, received from Texas, by the Horticultural Society of London, bearing yellowish-green flowers, and small leaves from four to six inches long, of a blue-green, slightly spotted; the scape, or flower-stem, rises from a foot to eighteen inches high. (*Bot. Mag.* 5122.)

RHODODENDRON CHAMÆCISTUS, L. Nat. Ord. *Ericaceæ*.—Native of the Alps of Europe. Habit compact and very neat. Leaves very small, crowded, elliptical, acute, smooth above and below; margin ciliated with stiff, short, glandular hairs. Flowers terminal, each upon a peduncle about an inch in length; the latter covered with glandular short hairs, and based by a couple of elliptical concave bracts. Calyx very deeply cut into five acute lanceolate segments, covered with short glandular hairs. Tube of the corolla very short. Limb spreading, and divided into five ovate wrinkled lobes; the base of the limb is beautifully striated with delicate purple; the rest white tinged with rose. Filaments long, curved at the base, and there furnished with tufts of inconspicuous white hairs. Anthers oblong, dark-purplish brown. Style curved. Stigma simple.

A lovely little plant, treating us in March and April with its delicately beautiful flowers in great profusion. Being quite hardy, it may be cultivated in a sheltered shady corner out of doors, in sandy peat. But it will also give much satisfaction as a pot plant; in which case it will require the protection of a cold frame in winter, and the drainage must be most perfect. Cuttings of the young shoots, just becoming hard at the base, root pretty freely in very sandy peat in a cool frame with a northern aspect.

COLUMNNEA SCANDENS. Nat. Ord. *Gesneriaceæ*.—A somewhat climbing plant, bearing numerous Gesneria-looking pink flowers, from the West Indies. The blossoms measure two inches and a-half in length, and are covered with slight red hairs; the leaves are somewhat ovate, of a light blue-green, downy, and paler on the under side. It succeeds well when cultivated in a basket suspended from the roof of a moist stove. (*Bot. Mag.* 5118.)

RHODODENDRON SMITHII. Nat. Ord. *Ericaceæ*.—This fine Rhododendron was bloomed, for the first time in this country, at Nutgrove, near Rainhill, in March, of the present year. It was discovered and introduced to England by Mr. Booth, who met with it on the northern slopes of the Lablung Pass, in Bhotan, where he found it growing in company with *R. Hookeri*, like which species it promises to be hardy in our climate. The blossoms, which are of a fine crimson-red color, and measure more than two inches across, are borne in close heads; the leaves are of a dark green above, pale beneath, and measure from four to five inches in length. This fine addition to the Indian Rhododendrons has been named in honor of the late learned botanist, Sir James Edward Smith. (*Bot. Mag.* 5120.)

STANGERIA PARADOXA. Nat. Ord. *Cycadaceæ*. Syn. *Lomaria coriacea*.—This remarkable plant is a native of Natal, and was sent by Dr. Stanger to N. B. Ward, Esq., by whom it was presented to the Chelsea Botanic Gardens, in 1851. Since that time it has been in cultivation at Kew. The caudex is about a foot in length, tapering to the base and terminating in a few roots; the leaves are spreading, two feet long, by one broad; the leaflets opposite, about twelve pairs in number; the plant bears several green cones covered with imbricated scales; the former measure from two to six inches in length. (*Bot. Mag.* 5121.)

EPACRIS OBTUSIFOLIA, Sm. Nat. Ord. *Epacridaceæ*.—Native of New Holland. About a foot high, with compact somewhat rigid habit. Leaves elliptical or linear lanceolate, obtuse, rigid, and mucronate. Flowers axillary, and solitary, sessile. Calyx divided into five acute short teeth, with a closely imbricated involucre of several greenish membranous bracts. Tube of the corolla short and wide. Limb of five bluntly ovate, concave segments, white. Stamens five, attached to the tube of the corolla, with very little of their filaments free. Anthers brown. Style erect, rigid, longer than the stamens. Stigma capitate.

EUGENIA TRINERVIA, D. C. Nat. Ord. *Myrtaceæ*.—Native of New Holland, and introduced to cultivation by Allan Cunningham. Dwarf, and compactly branching. Branches round; and, when young, covered with short brownish hairs. Leaves opposite, shortly petioled, distinctly three-nerved. Inflorescence in panicles, with the short pedicels at nearly right angles with the peduncle. Calyx consisting of five short, acute, green segments. Corolla of five rounded membranous rosy-white petals. Stamens numerous, with short, very slender filaments of a pale rose-color, and capitate anthers. Fruit obovate, inclining to quadrangular. Style slightly longer than the filaments. Stigma somewhat capitate.

A greenhouse plant of excellent character, and easy culture. It bloom in February and March most profusely; but the individual flowers are not lasting. Good fibrous loam, with a little peat and sand, is the best compost for it. It thrives well in a stove; but is most at home in the greenhouse. Propagates freely enough from cuttings in the ordinary way.—S. G. W.

EDITOR'S TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

NEW YORK HORTICULTURAL SOCIETY.—We are pleased to receive the circular of this society regarding the Fall Exhibition of 1859—the 14th, 15th and 16th of September. There are premiums consisting of silver plate, silver medals, money and certificates. We shall be glad to hear on this occasion that the merchants and their families turn out to patronize the Society. In London, fashion, from the queen to the millionaire, gives *eclat* by personal attendance, and what is better, they all seem to understand the articles on the tables, and to appreciate the excellent. New York should wake up to the importance of this matter, if she expects to gain full credit for the love of nature in her efforts to have a grand Park; without it she is liable to be accused of mere ostentation.

SUMMER APPLES AND PEARS.—A liberal display of early apples covers our table, *two deep*, at the moment we pen this, from the nurseries of Ellwanger & Barry; and certainly if such things “can be” in Rochester, they ought to be producible elsewhere.

Benoni, is a nearly round apple, not large, of a deep red skin, and an agreeable sub-acid flavor which will give satisfaction to most tastes.

Early Harvest,—the delight of all boys who have ever tasted it, no less than their older friends,—should be cultivated by every one who has an orchard. It does not keep long, but coming so very early it is deservedly a favorite.

Duchess of Oldenburgh. A September apple of Russian origin, highly esteemed; it is handsomely streaked, and good looking.

Sine-Qua-Non. A fair apple, with a sprightly and delicate aroma.

Tetofsky. Another Russian as its name implies, to which we are inclined to give a high character. The books say, “Succeeds at the North.”

Early Strawberry. A small but very handsome fruit, which succeeds the Early Harvest in July. Rich and excellent.

Primate. Refreshing, sub-acid. Good.

Large Sweet Bough. This is a very handsome and attractive apple which we should recommend to every one.

Summer Rose. An early August apple, of fair quality, but deficient in richness.

Red Astrachan, needs no commendation at this date. *Early Joe*, has a taste resembling a pear. September.

Summer Hagloe, a cooking apple of value. If our climate would produce such superb specimens, and it may perhaps if the same care and attention is given as Messrs. Ellwanger and

Barry give, they surely are well worthy of trial. The display has been really a great treat in our vicinity, where unfortunately, we have to import our apples at high prices.

Osband's Summer. For an early pear is quite an acquisition and these specimens very superior.

Beurré Gifford. This fine pear is coming into great favor, and justly so. Specimens large and fine. We give, however, for our climate a preference to the *Rostizer*, which is as early.

THE ROOT.—The quantity of root is always observed to increase with the poverty of the soil in which it is growing.—Duhamel found the roots of some young oaks, in a poor soil, to be nearly four feet long, though the stem was not more than six inches. Every one may have noticed this familiarly instanced in *Poa annua*, the grass most commonly growing on a gravel walk, its stem minute, its root a mass of widely-extending fibres. The cause of this is evident: the nourishment which is required for the growth of the plant, can only be obtained by an increased, widely-extending surface of root, and, to form this, more sap is often required than the plant, owing to the poverty of the earth, can obtain for itself; in that case a soil is sterile, for the plant must evidently perish.

A root always proceeds in that direction where food is most abundant; and, from knowledge of this fact, we should be circumspect in our mode of applying manures, according to the crop and object we have in view. We know a soil which, being shallow, never produced a carrot, or a parsnip, of any size; but almost every root consisted of numerous forks thickly coated with fibres. Digging two spades deep produced no material advantage, the gardener applying, as usual, manure to the surface; but, by trenching as before, and turning in a small quantity of manure at the bottom, the root always spindled well, grew clean, and had few lateral fibres. For late crops of peas, which mildew chiefly from a deficiency of moisture to the root, it is an object to keep their radiculae near the surface for the sake of the light depositions of moisture incident to their season of growth; hence it will always be found of benefit to cover the earth over the roots with a little well-rotted dung, and to point it in lightly.

If it be desirable to prevent the roots of any plant travelling in a certain direction, the soil on that side should be excavated, and the cavity refilled with sand or some other unfertile earth whilst the soil on those sides of the plant whither the roots are desired to tend should be made as fertile as is permissible with its habits.

To keep the roots of trees near the surface, gardeners make an impervious substratum beneath their borders, either by ramming a bed at the requisite distance from the surface, or by placing there an asphaltic mixture of hot coal tar and lime rubbish. Roots coming in contact with these do not turn aside, but immediately cease extending in length, and produce laterals.

NEW RESOURCES.—Constantly new resources for useful articles are discovered; another chemical product is *inocarpine*, derived from the chestnut of Tahiti—*Inocarpus edulis*. The sap of the tree exudes and forms a ruby-red gum on the bark; and this gum properly treated yields nine colors, from carmine, through green and blue, to black—further resources for dyers. Professor Nicklés has been at work upon the fruit, *Ligustrum vulgare*; the black berries he finds to contain glucose, raisin-sugar, and a waxy substance of a beautiful crimson color, to which he gives the names of *leguline*, which makes a good dye in different shades of crimson and purple, and it is also useful as a test for pure water. Experiments made in Algiers show that the leaves of the castor-oil plant are good food for silkworms, and that the oil may be deprived of its medicinal quality, and used for lighting and alimentary purposes, and the fibres can be worked for hemp.

ORCHARD HOUSES.—"Fox-Meadow" gives some practical hints in the present number, regarding Orchard Houses; one of his remarks applies particularly to planting out in the border. Now this may answer very well, but the best examples of fruit-bearing small trees

have been in pots, (boxes will answer) and these pots are brought out and plunged in the ground when the fruit is perfectly established. The curculio has then no chance with them. We have lately seen perfect success with this mode, and peaches of almost unheard-of excellence; Stanwick nectarines, plums, apricots, cherries, and figs, in the utmost perfection, were a regular dish, to say nothing of the finest grapes. The operation is more simple and of more easy accomplishment than most persons would imagine. In one case, observed so lately as the first of August, a beginning was made with peaches and nectarines in pots, the trees poor stunted affairs, and not prepared for their new quarters by previous training, and yet the result was a superb crop; so that with even common care we are to have the finest fruits both for the amateur and the market or shop. And here it must be remembered that a small family does not want a bushel a day; a variety and excellence is the desideratum. A few High-bush or Lawton blackberries, and the same of Catawissa raspberries, and so forth, give a sufficient taste; no private family would want a market basket full every day of even the finest peaches or nectarines, but a few and those of superior excellence every one desires, and every one who will take the trouble may now have them.

GERANIUMS STRUCK FROM ROOTS.—The accompanying is a specimen of propagating this class of plants by roots. I don't know if it is generally known. I find it very useful. Roots cut into short pieces at any time of the year grow just covered with earth. If put in in the autumn they will push in spring; any time during summer they are up in a few weeks.—W. W., in *Gard. Chron.*

DATURA HUMILIS.—This is rather a rare and ornamental flowering greenhouse shrub, of erect habit, with rich, ample green vine-like foliage, and large, conspicuous drooping double flowers, nearly nine inches in length, of a rich nankeen yellow color, having a tubular trumpet-shaped outline, with the two outer series of petals elegantly recurved backwards. The terminal growth of this species should be encouraged to grow erect, and left to throw out its lateral branches as it advances in strength. It will form an elegant and unique object in bloom, being well adapted for planting in conservatory or greenhouse borders, or for plunging out after the vigorous spring growth is obtained, with other allied species of *Datura*, or *Brugmansia*, in sheltered borders of the flower-garden, to be returned for blooming in the hothouse or conservatory during the late summer months.

IMPROVING WHITEWASH.—The grounds of a beer-barrel added to quicklime and water will greatly improve it for a wash. Tallow added to, and stirred up with the lime when slacking, will render the wash more durable.—K.

NEGLECT OF THE APPLE-TREE.—Our correspondent T., of Torch Hill, Georgia, gives, in the *Southern Cultivator*, the following picture of a neglected apple-tree he has in his memory; it represents, too exactly, the condition in which they are left by the careless:—

"The roots tortured by the aphid, and torn by wild horses (and plows); the trunk barked by rabbits, bored by borers, pecked by wood-peckers, blistered to mortification by the sun, and plastered to suffocation by the scale insect. The forks, the home of caterpillars, and the leaves



their sustenance; the limbs moss-covered; and the fruit—never failing, and never, by any possible complication of accidents, allowed to mature. Then, coming down, we get an inventory of its personal property. One tin coffee-pot; one earthen tea do.; various specimens of domestic crockery, some, too,—to particularize: three pair brogans; specimens, each, of plow, hoe, broom and skillet handles; skeleton remains of ox, principally ossa femoris and pelvic bones; do. of horse; do. of cat, entire; one "battling stick;" sundry bits of paling; articles of wearing apparel; clubs in quantity, from a walking stick to a martinpole!"

PENNSYLVANIA HORTICULTURAL SOCIETY will hold an exhibition at Concert Hall, Philadelphia, on the 20th, 21st and 22d of September. As it is desirable that novelty and beauty should be combined, all persons having fine plants and fruits are desired to correspond with Mr. William Saunders, Chairman of the Committee of Arrangements.

NEW PEACH.—The able Secretary of the Pennsylvania Horticultural Society has sent us the new seedling peach, raised by Mr. E. W. Keyser, 9th Street, below Vine, Philadelphia, which is a promising acquisition. In size and flavor it is between the Strawberry and the Rare-Ripe peaches and of most delicious quality. Mr. Keyser offers grafts to any applicant.

THE PROSPECTUS OF THE ARCHITECTS AND MECHANICS' JOURNAL, issued by Baillère Brothers, 440 Broadway, promises a new and useful periodical, at \$3 in advance.

LIEBIG'S MODERN AGRICULTURE.—The English edition of this work has been forwarded to us, and we shall take an early opportunity of making our readers acquainted with portions of its contents.

RICHARD PETERS, of Atlanta, Ga., will accept our thanks for favor received.

ANNUAL REPORT OF KEW GARDENS.—Sir W. J. Hooker's annual report on these justly celebrated gardens, has been issued in pamphlet form, and a good synopsis will be found in the *Gardener's Chronicle* for July 2, 1859. The duties of the employés are defined in such a manner as to show that they have no sinecure. The greatest number of persons admitted in one day to the Gardens (where they have free access to all parts), has been 13,761. The best attended months, as may be supposed, are June, July, and August, during which we have numbered so many as 267,223 persons. The fewest visitors are in November, December, and February, when they have been so low as 4,679.

A good regulation is mentioned in the following paragraph:—The public are forbidden to carry baskets of provision or parcels into the Gardens, or large reticules which may excite suspicion, or similar articles which facilitate the concealment of specimens.

The Palms unquestionably stand unrivalled; as do the Ferns, particularly the Tree Ferns; the Cactuses, Agaves, Aloes, and other succulent plants, and the Bananas. Among the last is the most extraordinary plant in all our collections, the gigantic Abyssinian Banana (*Musa Ensete*), described and figured by no author, save the celebrated Bruce, and now first introduced to Europe through W. C. M. Plowden, Esq., the British Consul at Mussowah. This striking herbaceous plant has attained in the Palm stove, in five years' time, a height of more than 30 feet, with a stem of $7\frac{1}{2}$ feet in circumference, and leaves, of which the blade, independent of the stalk or petiole, is 16 feet long! It also now shows promise of a flower-spike, corresponding with its foliage. The Orchideous Plants, under a recently-appointed and very skilful special cultivator, are improving remarkably. The singular Pitcher Plants, the noble Zamias, the Cycads and their allies, the Rice-paper Plant of Formosa, the wonderful Lattice-Leaf (*Ouvirandria fenestralis*) brought by the Rev. William Ellis from the Lakes of Madagascar, the Traveller's Tree (*Urania speciosa*), described by the same writer, the Lace Bark of Jamaica, the rare Cinchona, or best Peruvian bark, the noble collection of Sikkim Himalayan Rhododendrons, to say nothing of objects of lesser note, particularly of the almost innumerable, hardy and out-of-door plants, have proved highly attractive to all.

Arboretum.—The peculiarities of the climate of England render it singularly favorable for

the growth of a large collection of the trees and shrubs of temperate regions, from almost all parts of the globe; and hence arose the eminent desirableness of attaching to the Royal Gardens such an Arboretum as should be worthy of Great Britain, and serviceable to its extensive possessions and foreign relations. In pursuance of this object, the best suited localities in these grounds have been devoted to a classified collection of hardy trees and shrubs, amounting to about 3500 kinds (including marked varieties), and they are mostly in a thriving condition. Some years must however elapse ere the general effect of the whole can be fully seen, and the groups of different Pines, Oaks, Planes, Beeches, Ashes, Birches, Poplars, Willows, &c., each forming a clump of allied, but distinct kinds, will produce a beautiful variety of foliage in well-disposed masses, enabling also the visitor to compare the character of a vast number of carefully-named trees adapted to the climate, and to judge of their effect in the lawn, the park, or the forest.

Nurseries.—There are two in the Arboretum; one specially intended for planting the Kew grounds with ornamental trees and shrubs, and rearing a stock for exchange; the other (formed at the desire of the First Commissioner in 1855), to supply the metropolitan parks. Both are profitable; and the latter has proved to be a very useful part of this establishment. In 1856 it furnished 1010 trees (chiefly Planes and Elms); in part 1857, 4100 trees; and in 1858, 2475; the sizes varying from 6 to 14 feet; while the Pleasure Ground Arboretum sent to the parks of the metropolis, with the sanction of the Board, in 1857, 9289, and in 1858, 2814 trees and shrubs of great variety, besides furnishing the grounds at Kew with no fewer than 18,000 in the year just closed.

A magnificent Herbarium and Library are among the attractions;—Many authors have taken up their residence at Kew for weeks, and even months, in order to acquire that information which, it may be safely said, is nowhere else to be so conveniently or fully obtained. Add to them the casual visitors who come (in always increasing numbers) from the metropolis and the provinces, &c., and who are engaged in botanical, medical and economical publications, and some idea may be formed of the importance of this branch of the Kew establishment; to say nothing of the inquiries continually made by letter, inquiries that always meet with prompt and encouraging attention. After these statements, avouched by the acknowledgments of the authors in their respective works, it cannot be denied that the Kew Herbarium and Library, especially taken in conjunction with the noble collections of living plants in the Garden, and the products of plants in the Museums, are admirably adapted for the study of botanical science. And there is the great and inestimable privilege, not attainable in the capital of England, that the collections do not suffer from dust and coal-smoke, which are destructive both to paper and specimens.

The Economical Museum is one of the great features, and is now probably the most useful thing of its kind in the world. It has gradually grown to great size and importance, and here information respecting all vegetable growths useful to the world, are exhibited in all stages, from the rough bark to the finest textile fabric, and England by this school is enabled to adopt and apply to manufactures everything that can be valuable for the use of man. When shall we imitate this great and useful Garden.

THE NEW GRASS.—The following Memorandum, says the *Cottage Gardener*, sets all speculations about the "new Grass" at rest; it is taken from De Candolle's "Prodromus":—

"*SPERGULA PILIFERA* (*D. C., Fl. Fr. 4, N. 4391*).—Leaves opposite, linear, awned, rather stiff, glabrous, in bundles; stems creeping, branched, tufted; peduncles very long; petals twice as large as the calyx; seeds egg-shaped; hardy perennial; native of Corsica, on the highest mountains; flowers white; July and August; plant three inches high."

Awned Spurry, or literally, Awn-bearing Spurry, is the proper English name of the "new Grass." Some people put the stress or accent on the *u*, which is wrong, the accent is on the *e*—*Spérgula*. Four inches apart every way will be the best distance, but some will plant much

farther apart, and plant again between; but, as in other things, the more haste the less speed. The grand secret is, to have an immense stock of plants before you begin to "plant out;" but out with them in the open air as fast as they are hardened off, if you have them from cuttings, or as soon as they are fit to handle, if they are seedlings in seed-pans. There are so many square feet in an acre, and so many square inches in a foot; and if you mean to plant at four inches every way apart, you can soon cast up how many plants would plant an acre. From a good stock to begin with, a boy, or a girl, or her mother, and one of the improved Waltonian Cases, without candle or lamp, could propagate in June, July and August, a sufficient number of plants in one month to plant an acre of ground. That is some data to go upon. Some would do less, and some three times as much; and some will not try, or believe.

CUTTINGS.—M. Loiseau recommends that the usual method of striking cuttings should be altered. When, he observes, a cutting is put in perpendicularly, the sap, whose natural tendency is to rise, is expended in pushing forward a new bud instead of forming a root. But if a cutting is laid horizontally, or even with its lower end higher than the upper, that is not the case; the sap prefers to move toward the higher end, or, at all events, is evenly distributed between the two extremities. This causes the callus to form so rapidly that if the cuttings are put into a warm place, eight or ten days are enough to secure its formation, or even that of roots. Autumn-struck cuttings, taken off a little before the sap ceases to move, and treated in this manner, form their callus so quickly that they are ready for planting out before winter. In winter, it is necessary to put in cuttings in a gentle heat (*une couche tiède*), or beneath leaves deep enough to keep out the frost, and even then a callus will be found to have formed by spring-time. As for cuttings taken off in May, they must have more heat, such, for instance, as is afforded by a hotbed, or a hothouse, and they will then take, in many cases, in a few days.

IT WAS the opinion of Lampadius that the earths contained in plants are merely the effect of vegetation, and altogether independent of the soil in which they grow. The experiment was as follows:—Five beds, four feet square, by one foot in depth, each containing a pure earth,—alumina, silica, lime, magnesia, garden mould, and each mixed with eight pounds of cowdung, were sown with rye. The produce of each was speedily reduced to ashes, and the same principles were found in them all, particularly a portion of silica. Whence came the silica in the bed of alumina? According to Lampadius it was the result of vegetation. But Saussure, after Ruckert has shown that cowdung contains a portion of silica. (*Sur la Veg.* chap. ix. sect. 3.) Hence the substance which Lampadius could not account for but by means of vegetation he had supplied with his own hands. It is now known that the earths are partially soluble, some of them in pure water, and all of them with the aid of acids; so that we may fairly presume that they are taken up in solution by the root, and converted to the purposes of vegetation. Not that they are capable of affording any considerable degree of nourishment to the plant, but that some plants seem to be benefited by absorbing them. The grasses have their stems thus strengthened, and the Equisetaceæ and the Palms have their stems or leaves better fitted for the purpose of art. The leaves of Palms make a substantial thatch for covering houses, owing to the silica they contain; and the Dutch Rush is made use of to polish even brass.

GERMAN STOCKS.—The *Illustrirte Garten Zeitung* says, that the German seedmen produce the fine double varieties so well known by growing the plants in the richest soil, watching them, even from infancy, to see that they receive no check to their luxuriance, either through want of water, or from any other cause, until the seed is fully matured.

GUANO LIQUID MANURE.—Ten gallons of water will readily dissolve, or keep suspended in a state of minute division, about 50 lbs. weight of guano. When applied to plants, not more than five ounces should be added to that quantity of water. If it is made stronger, it injures or kills the plants to which it is applied.

SHEEP'S-DUNG, if employed for making liquid manure, should be a peck to thirty gallons.

SULPHATE OF AMMONIA, and any other salt of ammonia, must not be used more than a quarter of an ounce to each gallon.

The rule applicable to all these liquid manures is—*Give it weak and often.*

THE PENNSYLVANIA STATE FAIR, will take place at Philadelphia the last four days of September. The list of premiums is very extensive, and we predict for this fair the most eminent success, embracing as it does in the programme the greatest variety of interests, judiciously set forth.

ANSWERS TO CORRESPONDENTS.

SULPHUR FOR MILDEW.—M. Frederick Seitz, of Easton, Pa., in a letter to a friend of his, which has been sent to our table, says, "I see that the *Horticulturist* passes over the advice of Mr. Rivers, in the Orchard House essay, where Mr. R. recommends preventing or curing mildew by fumigating with lime and sulphur, without a word of caution, after my sad experience last year, when I came near destroying all my vines in two houses by the same process; if I did use two instead of one handful of sulphur, it still proves the great danger of the process, and I think should not be passed over without a word of caution." This may be very true, and we put it now on record, though with these remarks. No other instance of such destruction has come to our knowledge, and all should confide entirely in the statements of Mr. Rivers and other practical men. Mr. Seitz informed us at the time, of his calamity; but as he stated that he put his lime and sulphur into old white-lead kegs, we had no doubt of the cause of the injury he experienced. Any chemist will inform him of the nature of the gases which would be evolved by the mixture of unslaked lime, sulphur and white lead. Let Mr. S. convince himself of the efficacy of the two ingredients alone as recommended now on all hands, and use them as directed, and we think he will forgive the *Horticulturist*.

FAWKE'S STEAM PLOUGH is esteemed an eminent success. We must refer C. T. to the *Agricultural*, the daily and weekly press, for full descriptions, and to exhibitions of this capital American invention where trials will be made.

C. P. HALE, Kentucky. Your first flower is *Hedysarum prolificum*, and the yellow one is *Rudbeckia nirta*. There is no "Grape Shrub" such as you describe. Send a leaf and a flower, or the fruit.

M. W. S.—The pears sent are Bloodgood and Rostizer, both highly esteemed. The latter approaches, perhaps, more nearly the Seckle than does any other, and it is a prolific bearer.

DANIEL MILLER, Carlisle, Pa.—Box of fruit delayed on its route, arrived at last, but the contents unfortunately too far gone to be examined.

J. R., of Hampton, and G. N. B., Baltimore.—The subject you inquire about has been exhausted in our columns, and we must refer you to former volumes, where numerous illustrations will give the approved plans for rustic houses, arbors, &c.

JOSEPH LENNIG, ESQ.—Your Apricots were very superior.

CATALOGUES & C. RECEIVED—Wisconsin State Agricultural Society. List of Premiums and Regulations for the Ninth Annual Fair, to be held at Milwaukee, Sept. 26, 27, 28 and 29. These premiums and regulations are admirably conceived, and will be properly carried out.

New Jersey State Agricultural Society. List of Premiums and Regulations for the Fifth Annual Exhibition to be held in the City of Elizabeth, on the 13th, 14th, 15th and 16th, days of September, 1859.

Charter, Rules and Regulations of the Rosehill Cemetery, Chicago, Illinois. The Cemetery has been dedicated, and is in the full tide of success; it was much wanted, and is in a situation which will make it the pride of the citizens.

Testimonials to Henry C. Carey, Esq. This is a collection of speeches on protection to

American industry, of which Mr. Carey is the able exponent, and is also an account of his visit to the industrial regions of Pennsylvania, which seems to have been a perfect ovation. Mr. Carey is now in Europe.

Strictures on a Review of Mr. Carey's Letters to the President. From the Merchants' Magazine.

Grape Culture and Wine Making in the South. By A. de Caradeuc, of S. C. Augusta, Ga. D. Redmond, 1859. Second edition. A valuable pamphlet.

No. 1. Descriptive Catalogue of Fruit Trees at the Toledo Nurseries. By B. Fahenstock & Sons, 1860. Very complete and valuable.

Wholesale Catalogue of the Cherry-Hill Nurseries, West Chester, Pa., Hoopes & Brother.

WEBSTER'S PICTORIAL DICTIONARY, unabridged, and illustrated. This valuable work has now assumed a price and dimensions to suit the largest market. It should be a household treasure in every family. Whatever may be thought of its mode of spelling certain words, it is authority on so many points as to be indispensable. The illustrations amount to 1500 on various subjects, including natural history.

Guide Book of the Hudson River, etc. Guide Book of the St. Lawrence. These two little brochures will be valuable to all travellers, and stay-at-home people might expend twenty-five cents for the purchase of each much worse than in possessing works so full of plates and information.

Pear culture in the South; an essay written at the request of the Aiken Fruit Grower's and Horticultural Association of South Carolina. By L. E. Berckmans, of Augusta, Ga. A very clever essay in which the author contends that the South is to be our fruit producing country; and he maintains that Pears can be cultivated to a profit under certain conditions.

Wholesale trade circular of C. Reagles & Son Schenectady, New York.

Premium List of the Sixth Cattle Show and Fair of the Connecticut State Agricultural Society; to be held at Brewster Park, New Haven, on the 12th, 13th and 14th of October, 1859.

Miscellanea.

WATER.—As no seed will germinate unless a certain degree of heat is present, so also does it require that a certain quantity of water be in contact with its outer skin or integument; and this is required, not only to soften this covering, and thus permit the enlargement of the cotyledons (seed lobes) always preceding germination, but also to afford that water to the internal components of the seed, without which the chemical changes necessary for the nutriment of the embryo plant will not take place.

Pure water, or some other liquid of which it is a large constituent, is absolutely necessary: no other fluid will advance germination a single stage.

Liebig, from actual experiment on a large scale, states that both rain and snow contain ammonia; and if there be only one-fourth of a grain in each pint of water, the annual deposition from the atmosphere would be more than sufficient, on half an acre of ground, to give all the nitrogen contained in the vegetable albumen of 150 cwt. of beet root. Rain water also contains a peculiar organic substance, analogous to the extractive matter and gluten of plants, though differing from them chemically. To this substance Dr. Daubeney has given the name of *Pyrrhine*. Traces of salts and oxides have also been found in rain water; but, compared with all other naturally produced, it is so pure, and so abounds with the gases beneficial to plants, that none other can equal it for their service. That obtained from ponds or springs

often contains matters offensive or deleterious to plants. Those known as hard water, containing in excess salts of lime or magnesia, are invariably prejudicial, and pond water is scarcely less so. If it be stagnant and loaded with vegetable extract, it is even worse than hard spring water. These last named, if obliged to be employed for tender plants, should have a pint of the ammoniacal water of the gas works mixed thoroughly with every sixty gallons, an hour or two before they are used.

If pond-water be clear, and not only not loaded with putrid or mineral matters, but containing *Confervæ*, or other growing aquatic plants, it may then be used very beneficially for the watering of plants. This is ascertained from long experience, and it is explained by the fact, that such water contains an excessive amount of oxygen gas. This excess is greater in proportion to the brightness of the sunshine, and the length of time to which the water has been exposed to it. During such bright weather, the aquatic plants give out oxygen most abundantly. M. Morren found, that in the afternoon of a sunshiny day, the oxygen in such water amounted to sixty per cent. of the bulk of the air which it contained.

Water being such an essential application to the seed, as well as to the growing plant, it may be observed that the source from whence it comes is by no means immaterial. The best for the gardener's purpose is rain water, preserved in tanks sunk in the earth, and rendered tight by puddling, or bricks, and cement. To keep these replenished, gutters should run round the eaves of every structure in the garden, and communicate with these tanks. Every 100 cubic inches of rain water contain more than four cubic inches of air, of which more than half are carbonic acid gas, and the remainder nitrogen and oxygen, in the proportion of sixty-two of the former to thirty-eight of the last named.

A seed placed in a situation where it is supplied with the desirable degrees of heat, moisture, and air, begins immediately to enlarge in size. This is occasioned by its absorbing moisture, which, passing into the cotyledons, causes their immediate increase in size. The rapidity of this process is remarkable, and warns the gardener from disturbing the seed after it is once committed to the ground. A few choice peas, from which to raise stock, being sown, accidentally, in ground devoted to another crop, were removed after twenty hours, and were not again committed to the ground for some days. Not one of them produced a fruitful plant, and only two or three vegetated.

Moisture is absorbed, and causes the immediate enlargement of the parts of the seed; and this moisture, though it will and does penetrate through the surface of the integuments, yet is chiefly imbibed through the hilum or scar. It passes to the cotyledons, causing their enlargement, and setting in motion their elaborating powers for the nutriment of the radicle and plantlet; for, if they are removed, or if they have been injured by insects, the seed does not germinate; and if they are removed even after the radicle is developed into a root, the plant's vegetation ceases.

Lastly, if seeds of plants loving a fertile soil be sown along the partition, dividing a vessel into two portions, of which one portion is filled with rich earth, and the other with sand, though both portions are equally moist, equally loose, and equally warm, all the radicles will direct their course into the fertile soil.—*The Science of Gardening.*

Gossip.

ROOT-PRUNING.—Root-pruning of fruit trees should be done early in the autumn, and not in the spring. Nor can we advise you as to whether such root-pruning would tend to the production of fruit-buds in your trees. It would be useless, unless the trees are over-luxuriant. Taking up the trees in autumn, and planting them on mounds of lighter soil placed on the surface

of your clayey ground, would be better treatment, probably; but we have not sufficient information from you on which to found an opinion.

NEW MODE OF CAUSING SEEDS TO GERMINATE.—One of the seeds, that of a Cassabar Melon, I vegetated in less than 24 hours by my "patent" process, which I have found eminently successful in a variety of instances when all other plans have failed. It is simply by enclosing them in a small piece of flannel soaked in a weak, warm solution of oxalic acid, and squeezed nearly to dryness; this is enveloped in two or three folds of oil-silk tied up and suspended by a string hung over the neck, so that the little packet may descend just to the pit of the stomach, where the heat of that part in an incredibly short space of time induces germination. The seed to-day, after 38 hours' confinement in this situation, has a rootlet of 1 inch in length. And thus have I had seeds sent me from good hands who could do nothing with them, commence growing from 24 to 48 hours after being put to nurse in the above-mentioned mode and position. —*Thomas Ingle, in Gardener's Chronicle.*

ORCHARD HOUSES.—I quite agree with your correspondent "J. D.," in reference to his remarks as to orchard houses, which, as he says, are still in their infancy in the north. I have erected a small one some 21 feet long by 8 feet wide, and whatever others may say as to the system recommended by Mr. Rivers, I must confess that I am perfectly satisfied with the results of my small experiment. I see and hear on all sides, that everything is spoiled by the severe frosts within the last four or five weeks, and I am quite aware that all fruit in the open air is destroyed in my neighborhood; but in my little orchard house I have the pleasure of looking at Peaches, Nectarines, Apricots, Pears, Cherries, Plums, Figs and Grapes, in perfect health and vigor, the fruit setting beautifully, and in no case touched by frost, though almost everything outside in the same garden is destroyed. I am of opinion that the system of orchard house cultivation, introduced by Mr. Rivers, deserves the notice of every man who wishes to have a secure crop of fruit, especially if, like me, he is situated in a northern country where he may expect such frosts as have fallen to our lot within the last month. I may mention that my orchard house, the length and breadth of which I have given, is 7 feet high, and that it cost something under 15*l.* *A Constant Reader, R., Roxburghshire, N. B.—Gardener's Chronicle.*

SALES OF ORCHIDS, FERNS, AND OF FREMONTIA CALIFORNICA.—Mr. Stevens, at his auction rooms, King Street, Covent Garden, sold on the 17th, 149 lots of Orchids and Ferns, besides the plant above named, which was thus described in the catalogue—"By order of the Council of the Horticultural Society of London.—*Fremontia Californica*, a new and unique shrub (Torrey in Smithsonian Contributions to Knowledge, vol. v., p. 2); 'Of this most remarkable plant, a solitary individual was raised in 1851, in the garden of the Horticultural Society, from a seed received from Mr. Robert Wrench. In April 1854, it produced flowers for the first time, as large as those of *Trollius Asiaticus*, brilliant yellow inside, apricot color outside, with the addition of some cinnamon-colored down; and their substance was so thick, that each flower remained in perfection for weeks.'" It sold for £37 16*s.*

The following are the prices for which some of the Orchids were sold:—*Ærides Lindleyi*, £6 10*s.*; *Ærides nobile*, £9; *Æ. Schröderi*, £31; and another specimen, £27; *Phalanopsis amabilis*, £12 10*s.*; *Cymbidium eburneum*, £14; *Ærides maculosum major*, £18; *Vanda suavis*, £13 16*s.*; *Ærides Lobbii*, £17 10*s.*

The highest prices given for the Ferns were:—*Lasteræa villosa*, £3 5*s.*; *Gleichenia speluncæ*, "very rare," £3 10*s.*; *Cyathea arborea*, "very rare," £3; *Gleichenia dichotoma*, £1; *Todea pellucida*, £1; *Diplazium brevisarum*, £1 16*s.*

The Orchids and Ferns sold, altogether, for about £470.

STRONG CLIMBERS FOR A GREENHOUSE.—*Habrothamnus elegans*, *Mandevilla suaveolens*, *Passiflora cœrulea*, *P. alata-cœrulea*, *P. Colvillii*, *P. edulis*, *Tasconia pinnatistipula*, *T. mollissima*, *Lapageria rosea*, *Plumbago Capensis*, *Kennedya nigricans*, *K. Marryatæ*.

WEAKER CLIMBERS.—*Brachysema latifolium*, *Sollya heterophylla*, *S. linearis*, *Bignonia Chirere*, *Jasminum volubile*, *Kennedy a coccinea*, *K. rubicunda*, *K. Comptoniana*, *K. dilatata*, *K. heterophylla*, *K. monophylla*, *Jasminum grandiflorum*.

THE ROYAL COMMISSIONERS of the London Exhibition of 1851, have offered twenty acres of land to the Horticultural Society of London, as a site for a horticultural summer and winter garden, with Italian arcades, to be constructed at a cost of £100,000, one half of which sum is to be provided by the commissioners, and the other half by the society. The Queen offers a donation of £1,000, and Prince Albert £500. Her Majesty will further make the Prince of Wales and the young Princes and Princesses life members. The Princess Royal of England has also announced her intention to become a life member.

ANTS.—However these pests may plague you, all you have to do, says the *Midland Florist*, is to make deep holes with a crowbar, say two or three feet, and carefully withdraw the instrument, so that the hole may be open; thousands, aye, millions of these little pests will fall down them, and not get out any more; in fact, the place will in time be completely cleared. When they congregate away from plants, boiling water will settle their account quickly; but the former method will do anywhere if the ground will allow of holes kept open. In some light soils it is difficult. If you can do it no other way, soak it with water first. Guano is also effectual.

Correspondence.

MR. HORTICULTURIST:—I have thought that some of your readers might be pleased to know that *Tritonia Uvaria* can be readily propagated from seed. In November, 1857, I received per mail, from Mr. Wm. Thompson, seedsman, Ipswich, England, a small packet, which he had just obtained from the Island of Guernsey, where this fine plant has become naturalized, along side of the charming *Nerine Sarniensis*. I immediately sowed some of them in a pot in which I had just set a Dutch bulb of Roman *Narcissus* for winter blooming. They came up promptly, and grew all winter in the parlor window, making two small leaves each, without interfering at all with the big bulb, which distinguished itself in a most satisfactory manner, as a subject well adapted to this kind of ornamentation. In the spring I turned all together into the open garden border. The *Narcissus* leaves continued to grow strongly till the first of May, when they ripened off, leaving the young *Tritonias* to take care of themselves, as they best could, with very little attention from me; for then, the interest which has since been excited in this plant by frequent notices in almost all the *Horticultural Journals*, was not awakened. M. Thompson having only remarked that it might be suited to the climate of Georgia, though neither it, nor the Guernsey Lily, did well in the open ground in England—or at least would not ripen seed there.

All the approach of frost in autumn, I lifted my young plants, potting thence in one 8-inch pot, and placed it in a cold frame, when they made such growth, and so filled the pot with their tufted, long, and rather coarse, yellow, fibrous roots,* that I shifted them singly into pots of the same size, and about the first of April I turned them into the open garden. They resist finely our sun and drought, and I look confidently to their flowering before summer is out—probably about in time with the tuberose. That they are approaching maturity I infer from noticing that some of them begin to throw up suckers. Some accounts ascribe to the flowering stem the height of a man, (5 or 6 feet) and robustness equal to that of the common Day Lily (*Hemerocallis fulva*). But I shall be well content if mine attains the size and beauty of the plate in Redouti's *Liliacées*—about 3 feet.

* This can scarcely be called a bulbous plant.

I have a fine clump of Pampas grass, which stood out last winter with only the slight protection of an old and ragged bast mat thrown over the top of it during the hardest weather; and I think it would have survived if quite unprotected, our winter having been milder than common. The tips of some of the leaves were killed back about half their length.

If is only within the last ten days that some of the stems have begun to start for the race of flowering, I can count now some six or seven sheaths which are pushing strongly above their fellows, and certainly are swelling notably, but if they ever attain the bamboo-like stature stated in London's Encyclopædia of Plants (2d supplement) which is generally held to be pretty good Botanical authority, viz : 40 ft!—the metamorphosis must indeed be *miraculous*—as I think Dr. Lindley says it is. Hitherto our Gama grass (*Tripsacum dactyloides*) is the biggest swell among our grasses, and at this moment stands considerably taller than the Pampas.

Enclosed please find a flower sprig of the *Polygonum Teretifolium*. Although brought to notice by Mr. Robert Nelson several years ago, very little attention has been paid to it; but a more lovely thing, in its way, is not likely to be discovered very soon in our woods. How it should have been overlooked so long, is a mystery to me. I fear it will prove rather intractable under cultivation, as any intermixture of common garden mould in the sand where one attempts to grow it, proves a deadly poison. Hence its scarcity, and the reason why I cannot now send you a specimen with foliage, which would give you a better idea of the plant. If you wish one for the examination of a botanical friend, I will endeavor to procure and send it to you. [We shall be glad to receive it. The flower is very remarkable.—ED.]

M. A. W., *Athens, Ga., July 22.*

AN HOUR IN THE VINEYARD, by *Judge Reid*.—In my former communication I promised to write again, when the *blight* of June, and rot of July had passed away. The month of June opened with the vineyard in excellent order, the fruit well set, and everything indicating an extraordinary crop; but the frost of the 4th came in all the severity of the month of March, and although only slightly injuring my vines, destroyed the hopes of many other amateurs, who had embarked in the culture of this luscious fruit. During the latter end of the month of July, I visited several vineyards in the adjoining county of Franklin, more or less affected with the rot, and many wholly destroyed by the frost, for the present year's crop.

The mildew or blight had done almost no damage, but a yellow bug not unlike the lady-bug stung a large number of the under bunches, leaving a blue wound on the berry, causing it to wilt and fall off, as a general thing. In some vineyards the sour-rot had destroyed every vestige of a crop, and now nothing was to be seen but decaying fruit and yellow leaves. Many of the Germans mourned over the vines as if for the loss of their children. None of the theories regarding the causes of the mildew rot, blight, etc., seem to account for the results.

Having double bowed my vines this season, I look for almost a double crop, each vine being sound and in good bearing order, the fruit well set, and remaining on the stock well.

My Rebecca has six bunches, which have already begun to color, but being the first year of bearing the bunches are small. My Concord is a most thrifty vine, with branches and berries large and plump, which even the severe drought of last month failed to wilt or injure.

Two grape-vines of the White-Fox have fruited, and for the purpose of giving them a distinctive name, I have called one the "Helen" and the other "Frank." The grapes are large and round, and indicate at least that one of them will be a good table grape. These, with my Mammoth Catawba, I had trained upon a wall, which may account for their large size, increased, no doubt, by regular watering during the drought.

Sulphur strown on quick lime, has been tried, and found to be a partial remedy for the mildew and for destroying the lady-bug which stings the fruit during the evening. It may help what is called the dry-rot, which some think is the result of the injury. For the bitter-rot no remedy has been found.

All of my seedlings are doing well, and although a majority of my slips failed to root this

season, still, I flatter myself that there are enough to show the quality of the new vines. Among my rambles in Franklin, I met several Germans who spoke with much delight of the rich white and black grapes of the old country, and their intention of trying them in their new home. [The old story.—ED.]

I have tried the sweet White-water, Black Hamburg, and the Black Prince, with the usual result of a failure.

My vineyard will yield about 300 gallons, but were I setting out a new one, I would set the vines not less than six feet apart, and double bow every thrifty vine.

In small fruits, my strawberries did very little good this season, while my raspberries have been a success, from the Black-cap of the fields, to the rich Antwerp, Catawissa, Burton and Wilder. This being the first year of my Lawton blackberry fruiting, I am well pleased with the *promise* it makes, much more so than with the *fruit* of some of your *honest* Eastern venders, who send out *extra-choice* varieties, for which they charge *large* prices, and give you *small* berries, almost worthless for what you wanted them for.

Connersville, Ill., August 4, 1859.

A NEW HEDGE PLANT.—A good deciduous hedge is still a desideratum. The Osage orange and Honey locust form serviceable hedges when properly attended to; but herein lies the difficulty,—they grow so luxuriantly that at least two trimmings are required during summer to keep them in proper order; and as few can afford the necessary time during that busy period, the consequence is that few good hedges are seen, and even those that have succeeded in rearing a good fence are severely taxed in keeping it as such. What we require is a plant that, like the English hawthorn, can be managed by one yearly trimming, and that to be done during winter when there usually is more leisure to attend to such operations. Such a plant is the *Viburnum lentago*, or sheep berry. Naturally a plant of compact habit of growth, but little pruning will be necessary, and its foliage is peculiarly suitable for the purpose of a hedge. Compared with Osage orange or Honey locust its growth is slow, but *it grows into a hedge*, and will not require to be headed down for two or three years, as these strong growing plants must be in order to induce side shoots, and will, under good treatment, form a hedge 5 feet high as quickly as those of more luxuriant growth, since the upright growth of the latter is in a measure lost for a year or two. The flower of this *Viburnum* is much like the hawthorn both in appearance and fragrance, and altogether it is one of the most desirable plants for a shrubbery, although seldom planted. Being a native shrub it is seldom grown in nurseries to any extent, but as it seeds freely there need be no difficulty in raising it in quantities. I hope to see it become a favorite hedge plant. [Probably the *Ligustrum Vulgare* is here meant.—ED.]

I think that the *Celtis occidentalis* or Nettle tree would also be a good plant for hedges.

Germanstown, Pa.

WILLIAM SAUNDERS.

MR. EDITOR:—This poor fruit season may perhaps be turned to excellent account by noticing and recording for future use the sorts of fruit that bear best and hence are most reliable. I shall speak especially with reference to the apple only, as being in its varieties the only well established fruit among us. But the pear this season is bearing here very much better than the apple, and I feel the utmost assurance that with right management the West will yet abound with that princely fruit. In my very limited range this season I have noticed fine crops on the Maiden's Blush, Carolina June, Trenton Early, considered synonymous with old English Codlin, Carthouse or Little Romanite, while the Winesap, Milam, Jannet, Yellow Bellflower, Seek-no-further (Westfield), English Golden Russet, Rambo, and others have partial crops. And yet this season on the whole must be considered, to some extent, exceptional as a test to the permanent bearing qualities of different varieties, for at least two of our best bearers ordinarily, the Limbertwig and Red Lady-finger, are almost totally barren so far as I have noticed them.

T. McWhorton, of Mercer Co., an extensive orchardist writes that among his best bearers are Red Astracan, Maiden's Blush, Sweet Pine, Duchess of Oldenburg, Keswick Codlin, Jersey

Sweet,—nearly every one like our own list above early varieties. Among those bearing reasonably well he names Peck's Pleasant, Rambo, Summer Pearmain, Early Harvest, Jonathan, Carolina June, Sops of Wine, Golden Sweet, Autumn Strawberry, Lowell, Peach Pond Sweet, Summer Sweet Paradise, Cooper's Early White, Milam Domine, Hurlbut, Jannet. Most of these are also summer or fall varieties, of which, by the way, the lists afford a far greater number that prove satisfactory here at the West, than of winter fruit.

Mr. McWhorton also gives a description of an early apple received by him from Knox Co., in this State, which from its very long stem he calls Early Long Stem. "Fruit under medium, oblong-conical, slightly ribbed; cavity wide, acuminate, stem over two inches long; basin shallow, much plaited, color green or olive green with whitish specks; flesh very fine, juicy, rich sub-acid, *first rate* : I believe as good an early apple as I ever tasted. Season, August 1st. Have heard it is productive, but have had only some half dozen specimens."

Bloomington, Ill., August, 1859.

Truly, F. K. PHENIX.

JOHN JAY SMITH, ESQ.—Our grape crop in the West promises to be very large—the best since 1853. Some vineyards will produce 400 to 800 gallons to the acre,—the average yield will probably be 350 to 400 gallons per acre, for the Ohio Valley. The season for rot is now over, and we have nothing to fear but hail-storms. The vintage this year will be unusually early, owing to our warm, dry summer. It will probably commence the 3d week in September. The first week in October is the average commencement for a series of years, in this vicinity.

Very truly, R. BUCHANAN.

Cincinnati 11 August, 1859.

DEAR SIR:—Being in the vicinity of Baltimore, Md., on the 10th of June, I called on Messrs. Sam. Feast & Sons, and through the kindness of the elder Mr. Feast, was shown through their strawberry plantations, and I had the pleasure of seeing and tasting their new seedling, "Fillmore," which has been attracting considerable attention in that vicinity for two or three years past. They have not less than 100 varieties in bearing, including about sixty of their own originating, selected from several thousand seedlings grown in 1852,—the time at which the "Fillmore" originated. Many of them promise well, but the "Fillmore" has left all in the rear; no plants of it have as yet been sent out, but they have very wisely been using considerable effort to test its value before offering it to the public; it is found in every quarter of their grounds, side by side with other popular sorts, and everywhere showed the same marked superiority. It had, evidently, as Mr. Feast told me, passed the meridian of its season by three or four days before I saw it, but nevertheless I have never seen a strawberry that pleased me so well. I might safely say that the berries were one fourth larger than any of the other varieties, not excepting Hovey, Wilson or Peabody. It is of fine flavor, and as to its value as a market variety you may judge from the fact that the Messrs. Feast were then in the flush of the strawberry season, getting fifty cents per quart for them in Baltimore. The plant is a robust grower and evidently very hardy. It is a hermaphrodite.

I have no interest in thus noticing it, further than the interest or good of the public is concerned. There is much *humbaggery* in new fruits now-a-days, and I consider it the duty of every pomologist to expose these impositions whenever they are cognizant of them, as well as to notice favorably such fruits as he thinks, after a careful examination, will prove valuable to the community. I think whoever procures Messrs. Feast's Fillmore will never have cause to regret it.

We have very few peaches and not more than half a crop of apples; a friend of mine in the Eastern part of this State sent me three varieties of peaches on the 13th of July, two of these seedlings of his own raising; one was really a fine peach and of good size for so early in the season. It seems strange that they ripen about 3 weeks earlier 150 miles East of us than they do here. I suppose you have plenty in market now from the South.

Stanton Nurseries, Stanton, Va.

Yours, truly,

F. DAVIS.

FRUIT IN NEW YORK.—As to the demand being regular or uncertain? My experience is—that you can never take fruit into New York at a *wrong season of the year*, and you can never *take enough of it*. But if you take all **GRAPES**—they ask—havr'n't you got peaches, apricots, nectarines, plums, &c.? It would be a good investment for any practical man to grow the above on a large, extensive scale. I could make it *pay well*, but 95 per cent. of those who start into Horticultural pursuits are mere speculators that know nothing about the matter at all—or employ some man who has worked in the old country, in some garden belonging to Lord Fizzle, or the Duke of Noland, and they write and talk generally a lot of impracticable nonsense and trash—lead and misguide, and ruin everything they get in contact with.

In reference to the New York fruiterers and their per centage, they generally contrive to get about one half. We get what we consider our fruit is worth, and leave them to get what they can by retail; we have *no per-cent. agencies*. Nectarines, peaches, apricots and plums, in our *American Orchard House*, will *pay*. It seems to me that men are unable to step out of the old school-boy way—they *practise* the same *old routine* of “my father,” or say, Mr. Somebody did it, consequently I must do it. There is too much of the *practical* and not enough *originality*. If Mr. Rivers has struck out an original feature in England, why should not we strike one here, that is better adapted for our wants, our climate and our necessities? If Mr. Rivers is satisfied with a peach in a pot with its dozen fruit, it will scarcely satisfy nor pay us in a commercial sense. If Mr. Rivers has span-roofed houses with pots holding scrubby sticks, we must have span-roofed houses with *TREES in rows, espalier*, three or four feet, one row from the other, and we must have *as much or more* fruit on them as we used to have in our orchards some years ago. Or we must train them under the glass as *fans*, and we must work our peaches, apricots, nectarines, &c., on plum stocks if they do cost a trifle more; and we must train our own trees from the *bud*; we must also plant the kinds that pay the best, and throw the great long nursery list away to the four winds. *Noble, fine, handsome fruit must go into the COMMERCIAL ORCHARD HOUSE*. The object of a few days *earlier* amounts to nothing. When we have it, what is poor fruit worth? A peach with a large stone and an insipid bit of skin! All these things have to be guarded very closely, and I give them as suggestions. I see so much utility in this orchard house, so many ways of constructing for the required wants of the various kinds of fruit, that is requisite should be grown, that I could scribble for a month; but I will not punish you. [Pray punish away—we rather like it.—Ed.] C.

ALLIUM ACUMINATUM.—A few bulbs of this charming plant were sent from California to the Horticultural Society by Mr. Hartweg, and flowered in the Chiswick garden, in a greenhouse. It is, however, hardy, if kept in a place dry in winter. The name onion conveys to an English ear ideas of anything but beauty, for many common species are as ugly as plants well can be, and the handsome kinds are almost unknown in gardens. Nevertheless, in a genus consisting of nearly a couple of hundred species, many may be found which ought to take rank with hyacinths and jonquils; of these moly and the magical onion are well-known examples, though now-a-days confined to curious collections; and the present rare species is another, much handsomer than either, and probably the queen of the family. Its gay flowers, almost transparent when colorless, and stained with the richest rose-color near the points, can scarcely be regarded as inferior in beauty to the Guernsey Lily itself, and they are far less fugitive. The plant grows about a foot high, with narrow taper rushy leaves, about as long as the scape. It is well deserving of cultivation in every border.—*T. K. S., in Gardener's Chronicle.*

FROM OUR YOUNGEST CONTRIBUTOR.

It was a place I had never been to before; and no, thank you, I'd rather not go again. It was like a sea-port town, you know, and everybody got their livings by selling fish; and so I set off to climb a very high hill that was there. And the sun seemed perched at the top of the hill like a great snow-ball, only not the color of snow, and I kept wondering what would become of me if it should chance to roll down.

There was a nice little girl climbing the hill about ten yards ahead of me. A nice little girl? Oh, you know what I mean—she wore ankle-bands, trousers with crochet round them, and one of those all-round-my-hats.

I asked her who was her hatter, and said it was very warm climbing. 'Miss, may I have the pleasure of giving you a hand up?' and she said: 'Thank you, sir. You are a very polite boy; but, thank you, I haven't far to go.'

No, I didn't see her face; she had one of those hats on, didn't I tell you? but she had a very nice voice, like ma's when she speaks to baby. When we got to the top of the hill, there was a great big fellow waiting for us, and he never said a word, but came and punched me, and when I said: 'What's that for?' he boxed me the second time; and so I said: 'Just do that again—will you?' and he did.

Then the little girl whispered to me that he was her husband, and that I'd better run away, because he had a nack of putting little boys out of their misery, and then pickling them. She said he'd killed more people in his time than he could bury if he were to dig graves twelve hours a day, besides overtime, for sixty years. So I gave him a regular look, and ran down the hill, calling him 'Old Doctor! Old Pills!'

Not the same side of the hill; and I ran straight into an orchard, where there were lots of apple and pear-trees. There was a fellow there who used to go to Cockle Bell's school when I did, and he was stealing apples. I told him that the Bible says, 'Thou shalt not steal, and, besides, you'll get caught at it; and just at that moment the old farmer came up, and he said to that fellow that used to go to Cockle Bell's: 'Brimstone!' and to me: 'My little man, I have overheard your very sensible remarks, and I perceive you have had a religious bringing-up.'

And I said: 'Can you sell me sixpenceworth?' And he said: 'Of my pears?' And I said: 'Yes, sir, please.' And he said: 'My fine little fellow, we will see—we will see.'

When he was gone, I remembered that I had bought a pennyworth of Turkey nobs out of the sixpence, and when I counted my money,—there, I'd only fivepence!

When he came back with a large dishful of pears, I looked at them and said: 'Haven't you made a mistake, sir?—wasn't it fivepenceworth I said?' and he said: 'Oh, was it, my fine little fellow? Well, then, I've made a mistake; but, as you are a good boy, and have pious parents, you shall have the pears all the same.'

Then he went on digging in a parsley-bed, and I sat down eating the pears, only they had no taste, and he shouted to know if I shouldn't like to play with his little boy: and I said: 'What! all about this garden?' And he said: 'Yes.' And I said: 'Oh! shouldn't I though!'

So he took me to his house—a very funny house, and he had no wife, and it was very dirty; and he opened the door of a room, and there was a horrid monster; and he said that was his little boy—why didn't I speak to him? And so I said: 'Have you any marbles?' And that horrid monster said: 'Oh, lots! Come in; I'll play you.' And I wanted to run away, only I could not; and this creature began letting off fire-wheels on me, and throwing squibs and serpents in my face; and he made me hold my arms straight out, and he rammed them hard, and let them off like cannons, and blew my fingers into a nasty dark pond; and horrid alligators, with red eyes, came and tried to swallow them; and leeches came creeping up my trouser-legs, and they got in my mouth, and down my throat, and up my nose, and some of them curled themselves up in my head, as if they were going to stop there a good while. And that horrid little monster sat on a bundle of serpents, and they made themselves into an arm-chair for him, and he kept laughing and shouting: 'I'll play you—I'll give you sixpenceworth of pears for fivepence.' And some very little red-hot men came and kept jumping through my eyes, and then rolling out of my mouth, follow my leader, and trying who could do it quickest. And one of them borrowed a pair of hob-nailed shoes, and lay on his back on my tongue, filing at my teeth with them. And another of them kept putting his head out of my left ear-hole, and shouted 'Apples!' and then out of my right ear-hole, and shouted 'Pears!'

All at once the side of the room fell down, and there was such a beautiful lady sailing in a large cockle-shell on a lake of very blue water, and she said: 'Physic!' and all these demons vanished.

Didn't you guess? Why, that was ma, and she said: 'For goodness' sake, Alfred, dear, why do you moan so pitably?' And when I told her all about it, she said: 'My love, you have had the nightmare. It is time to take your medicine. Don't go to sleep on your back, or you will have it again.' And I said: 'What! the medicine, ma?' And she said: 'No, dear, the nightmare.'—*Chambers' Journal.*





GOLDEN HAMBURGH

Grown by C. P. Bissell & Salter, Rochester, N.Y.

for THE HORTICULTURIST,

The Present State of Horticulture in America.

"The most highly esteemed favour which the early missionaries at Tahiti could confer on the king and queen was to furnish them each, on state occasions, with a specimen of that splendid novelty, the Sun-flower, to be worn in their dusky bosoms."—*Quarterly Review*.



WE lately returned from an excursion through one of the finest valleys the sun ever shone upon. Wheat, oats, corn, and potatoes, are cultivated in the neatest and most successful manner; up to the very fences the products for man and beast are grown without a weed. Limestone in abundance gives annual verdure to this large and lovely valley. Every farm has a good house upon it, and this is generally exceeded in size by the barn, at this moment bursting with fatness. As the eye glanced over the fields of mixed orange and green, the harvester in motion, and the tractable animals obeying the behests of the owners, we could but ask,

"What wants this scene of loveliness?"

We were domiciled at a watering-place overlooking the broad acres, and saw the well-grown grain collected from a thousand fields. Our table was bountiful in meats and bread, and unexceptionably attended; but the fruits upon it were precisely those in favor before the Revolutionary War. The raspberries and strawberries were wild ones; the cherries, honey and black-heart. Why should this be?

Let us ride through this lovely scene. You may do so for an entire day with farms after farms succeeding each other, but you see no ornamental planting, no garden, no lawn. We did not find on such excursions an ever-green tree nor an asparagus bed! Two yuccas in bloom, at long intervals, were the sole flowers, except a few of the older kinds of hollyhocks, which seem to have flourished in spite of want of culture. The potato field or the grain crop, amidst a few utterly neglected old apple-trees, comes within a few feet of the mansion, whose best rooms are *almost* always shut up and the family of hard workers residing in the kitchen. This is no fancy picture. It is a superior one to the vast majority presented throughout our great and prosperous country, where "door-yards" with pigs for tenants are the rule, too often, rather than the exception. In our happy looking valley, money is the great good; to raise the greatest crops gives the greatest distinction, and thus from father to son has it gone on; generation after generation come to look at the beautiful scene, to work hard upon it, to live without intellectual cultivation or amusement, and to die and be forgotten as their fathers died.

Can no tocsin be sounded in the deaf and dull ears of these practical farmers? Can we not awaken them to the beauty and utility of fine fruit, to the study of the superiority of one tree, plant, or flower, over another? Shall all future descendants of these rich people go to their last rest without one glimpse of nature's adornings? How shall we come at their darkened imaginations, and how show them the beauty of loveliness?

That we cannot reach them by any scheme yet devised by the Patent

Office, seems certain ; that no number of the *Horticulturist* is taken in the county we could safely assert. Must we leave the spot to be never again attracted to it? or shall we return, in imagination, some thirty or fifty years hence, and find a portion of the pig-rooted "door-yard" blossoming with the rose?

The way to accomplish so desirable an end is not difficult to suggest. Let a benevolent mind take to this somewhat benighted region a nursery. Let him show the *Triomphe de Gand*, or Hovey's Strawberries; let him give to the first housewife who will listen to him a few plants of fine raspberries, show some fine flowers, and gradually gather round him a lover or two of handsome trees, till soon he organizes a Horticultural Society, and by emulation sows the seed of future progress. Here is a fine field for benevolence, for usefulness, and for training immortal minds to something more ambitiously useful than the continuous pursuit of *grain* and potatoes engenders.

Every one at all conversant with the present condition of Horticulture will admit that its state and prospects were never brighter than now. That it has many things to contend against is, however, apparent. And first we would name the reluctance with which some of those able to communicate information to the public come forward with their pens. The present editor of this journal is an amateur; his position was rather forced upon him than selected by himself, and that occupation, necessary to his position, is still one which he would prefer should be filled by an abler hand. He has, however, an independent position; is no way connected with commercial gardening or nurseries, and he believes he is the first conductor of a periodical devoted entirely to these subjects who has not been more or less influenced by commercial views. He requires assistance from the ablest pens, and though he has much from such sources, there are still experienced amateurs as well as gardeners and nurserymen who should devote a little of their leisure to instructing others as a means of reaching the uninitiated.

It is really surprising what a single individual may perform in the way of getting up a love of the best fruits, flowers, and trees. We could name small communities in the country where to be entirely ignorant of these subjects is to be unfit for society, but in the majority of neighborhoods, the reverse is the rule. In the infancy of the study or pursuit, Societies with competitive exhibitions are necessary, and the longer they can be kept in healthy operation the better. After a certain period, however, they are less needed; the seed once sown it must continue to grow.

As for the benighted regions we set out by describing, there seems but little to hope for them in the present generation; but benevolent persons may do much by exciting emulation; above all, let us have *something taught to the children* on these topics. What, for instance, would interest a school so thoroughly as a lecture once a year, with plenty of samples of strawberries—enough for all to partake of; or suppose a teacher as a reward for diligence should produce a table spread with fruit of any kind, and give a short discourse on their culture; if even a waiter of cultivated blackberries were introduced and distributed, with an explanation of the differences between them and the common wild ones, we may be sure the children would never forget it. In this way whole neighborhoods could be filled with young people desirous of trying their hands in better garden culture than their fathers practised; Horticultural Societies which would

undertake an annual or semi-annual exhibition to school children, and give them a *taste* while they instructed them, would make one of the strongest moves in the right direction. It has been tried abroad and has succeeded.

Hazlitt, in one of his Essays, answers the question "Why is a great chess-player not a great man?" by the reply, "Because he leaves the world as he found it." Not so the Agriculturist and Horticulturist; they leave the world better than they found it, if they pursue their avocations with zeal and understanding, and bring a knowledge of its humanizing influences to their neighbors.

FRUIT TREES IN ORNAMENTAL PLANTATIONS AND ON LAWNS.

BY WILLIAM SAUNDERS, LANDSCAPE GARDENER,
GERMANTOWN, PA.

THE observations of the Editor of the *Horticulturist* and of his correspondent in the August number, deserve the consideration of every resident of the country. It is there remarked that some persons consider fruit trees are inadmissible in pleasure grounds, and that the severe rules of Landscape Gardening will not allow any such compromise as a useful fruit-bearing tree on a lawn. I am not aware of any such rule, and it would be extremely difficult to define a set of rules that would be universally applicable in matters of taste; there must, however, be a point where the lawn terminates and the orchard begins, and that point will in most instances be determined by local circumstances, and need not interfere with any laws of landscape gardening or necessarily infringe upon good taste.

The scenic effects of trees, of whatever kinds, depend very greatly upon their grouping and arrangement. Nothing would present a more commonplace or monotonous appearance than an acre or two of ground planted with sugar maples, horse-chestnuts, or any of the finest ornamental trees, at regular distances of 30 or 40 feet apart. We are so accustomed to this arrangement with pear, apple, plum, cherry and other fruit trees, that our ideas of them are much more associated with the arrangement, than with individual beauty, either of form or foliage. Many of our most productive and valuable fruit trees possess great symmetry and regularity of growth, while all may be formed into effective groups if planted with that object in view. One of the most interesting features that I have seen was a group of pear trees on the lawn of Matthew Howland, Esq., New Bedford, Mass. These trees had been "heeled in" while the grounds were in course of improving, and having taken root and grown finely were allowed to remain. They were all planted within a few feet of each other, and the irregular growth of the branches in consequence of their proximity, bending with fruitfulness and health, the whole closely surrounded with the smooth green lawn, formed one of the most pleasing illustrations of the useful combined with the ornamental, that could be wished.

Utility as an element of beauty, has not received that attention which it claims. I am convinced that it influences, to a very great extent, those faculties of the mind which enable us to establish a mental standard of beauty, and that frequently without our recognizing at the moment, the

causes that influence our decision. I do not here use the term utility in the limited sense that would merely imply the gratification of those wants necessary to our existence, but in its wider application of enabling us to discover beauties through educated intellect, rather than through the mere organic sense of vision.

It is not to be understood that I would recommend the planting of fruit trees for ornament in preference to others, but only endeavor to show that they need not necessarily be excluded; and that a single specimen-tree on a lawn, appropriately situated, such as a Vicar of Winkfield, or a Glout-Morceau, or a Seckle pear tree would certainly be as beautiful an object, considered merely as a tree, as many of those so-called lawn trees. And even those that are not individually sufficiently meritorious for conspicuous positions, may be arranged into effective masses; any person may collect a variety of paints, but only an artist can with them "lay the landscape on the snowy sheet." He may, even out of apparently simple and rough materials produce a "thing of beauty." So the landscape gardener may form a pleasing and varied composition with objects that may not possess much individual beauty, but which judiciously combined, are capable of developing impressive and characteristic scenery.

Any tree or plant therefore, that can be appropriately introduced into the landscape need not be excluded; and if we can arrange fruit trees so as to develop pleasing outlines of composition there is no apparent reason why it may not be done. On the contrary, there are occasions where such an arrangement may be introduced with the greatest propriety, and instead of conflicting with good taste, harmonize perfectly with surrounding improvements. Suppose the case of a farmer who wished to surround his dwelling with 10 or 12 acres of lawn thus profitably planted. Shelter would first be secured by planting evergreens on the most exposed sides; immediately around the house and for some distance beyond, the planting may be of a purely ornamental character; receding from these, introduce isolated specimens of the finer-growing cherry trees, following with a well defined group of the same, connecting in its general curvature, with the planting nearer the dwelling. A bold projecting group of pear trees may in a similar manner be introduced, and joined to the cherry plantation by select specimens of each. Apple and other fruit trees may be similarly connected and located; the crab apples will form single specimen trees of much beauty. These groups must be carefully arranged so that a pleasing sky outline will be secured. Fortunately, both apple and pear trees are so diversified in their growth, that forms may be selected as varied in character as the Lombardy poplar and the weeping willow. As the lawn extends, the groups may become more detached, and more definite in general form, by planting masses of one kind of tree, with well defined and ample sized glades of unobstructed lawn between.

The great secret of producing effect principally consists in properly defining the outlines of groups by placing low growths in front, that the lower branches may meet the ground and present an upward sloping bank of foliage. Dwarf trees of the respective kinds of fruits may be used, although any tree may be kept dwarf by due attention to heading down, and if dwarf trees are used they should be of kinds that will present a healthy appearance, if not a luxuriant growth. Any attempt to dispose of the plants in these groups at regular distances, especially in the more prominent

masses, will completely destroy the desired effect ; indeed the whole arrangement must proceed from a careful and intelligent study of the subject.

In the course of my practice I have frequently taken occasion to advise the propriety of planting fruit orchards so as to secure more variety of outline than they usually present, and to a certain extent carry into the orchard some of the more characteristic features of ornamental planting. There are many situations where a fine effect can be produced by planting the orchard so that it will appear as a further extension of the lawn, somewhat in the manner that I have here attempted to sketch.

It may be argued that very little fruit would be produced by this method of planting, the trees being placed so closely as to prevent thorough cultivation. This objection is not so formidable as might at first sight appear. The soil around the trees in all the larger groups can be cultivated the same as in any other well kept shrubbery plantation ; and I am not convinced that the European method of planting apple and pear trees at 40 feet apart, is the best adapted to this climate. Closer planting, so as to procure a more thorough shading of the ground by foliage, and the shelter thus afforded from the drying winds of spring and summer, arresting to some extent the rapid evaporation of moisture from the soil, are considerations worthy of attention.

An ample variety of really ornamental, and at the same time useful fruit trees may be selected, and it would be no difficult matter to plant a lawn almost exclusively with such, and still produce a great variety of landscape effect. The American and Spanish chestnuts are lofty trees bearing useful fruits ; so are the shell bark and peccan hickory nuts. The black walnut may also be introduced ; the English walnut, of which there are dozens of fine old specimens in this vicinity yielding annually many bushels of fruit, is also available. The butternut forms a fine group ; its foliage at a distance resembles the ailanthus. The persimmon, when in vigorous growth, has glossy foliage of great beauty, and like the butternut, is well adapted for planting in groups. The mulberry family, although in some respects rather objectionable, would form a distinct feature ; the red fruiting forms a tree of considerable size and is rather distinct in foliage. The black European is also a desirable plant. The pawpaw is certainly one of our finest foliaged plants, forming a beautiful group in close planting. In rich soils it will grow into a beautiful small tree, with foliage equal to a magnolia, and fruit but little inferior to the banana. The wild cherry, and the English bird cherry are both ornamental trees, especially the first ; and the mahaleb cherry is very desirable on account of its fragrant blossoms ; in this respect it resembles the English hawthorn and is a capital substitute for that delicately fragrant plant so much planted for its beauty.

For shrubbery and undergrowth we have the chinquapin chestnut, which will even grow into a good sized tree under favorable conditions, but may easily be kept as a low spreading bush, for which it is admirably adapted. The species of berberry afford much variety, both in habit and foliage. The cornelian cherry (*cornus mas*,) is a plant seldom equalled in beauty when covered with its brilliantly colored cherry like fruit, of which some people are fond. The species of hazel nuts form admirable bushes ; the purple leaved variety being particularly attractive in early spring, and is of very rapid growth. The cut leaved and variegated leaved elder berry are frequently cultivated in shrubberies ; and the wild plum, quince, high bush

cranberry, and even the huckleberry need not be excluded when they can be properly disposed.

The whole subject is of much interest, and, as Col. Dewey remarks, in the August *Horticulturist*, "It is of growing importance."

[Mr. Saunders sustains our original position, which is true as regards the farmer and the suburban resident with small grounds. Will some of our correspondents now help us to their ideas of handsome fruit growing trees.—Ed. H.]

PHLOXES.—I was much pleased with the excellent article on this subject with which you favoured your readers in the *Chronicle* of the 22d of August. Having been an admirer and cultivator of all the best varieties of this beautiful genus that have yet been sent out either by English or Continental growers, I may perhaps be permitted to add a few more kinds to those already named, that I consider worthy of a place in every collection.

Of Phloxes the varieties may now be said to be almost endless, but some of them so closely resemble each other that it is only by carefully comparing them that their slight differences are discovered; such distinctions are therefore undeserving of attention; only the best formed and brightest coloured in each particular class should be kept—the rest should be discarded.

As soon as I receive any new kinds I have a bed prepared for them, and plant out several of each sort, always keeping the newest varieties in beds by themselves. The older kinds are also planted in beds beside the new ones, so that when they are all in bloom I make my comparisons and memoranda respecting them. Whenever I am convinced that any of the new ones excel the older kinds in habit or beauty, I then throw away the inferior sorts, and by so doing I find that a very beautiful collection can be formed without being encumbered with a multiplicity of names.

I receive between 30 and 40 different sorts from various sources annually, and I often find among them only four or five worth keeping, or that are either distinct from or superior to those I have already grown. If, therefore, I had not some principle to direct me I should by this time have at least 500 names of Phloxes on my list; but by making annual selections as I have described I reduce the number to less than 100.

However strange it may appear it is a fact that the Phlox has only lately been treated with anything like care or attention. Generally they have had allotted to them places in borders among shrubs, where they have been either overgrown by other plants or completely starved; for the poor Phlox has often had to do service where nothing else would flourish. All must however, I think, admit that a little care and attention bestowed upon it will be amply rewarded; few plants are so useful either for pot culture, cutting for bouquets, or "clumping" in the flower garden, and if proper attention is paid to height and colors at planting time, a succession of bloom may be had from June until November.

The following I can with confidence recommend: Addisoni, Alba magniflora, Herincq, Josephine Pariot, Madame Fontaine, Madame Rendatler, Primulæflora, Roi Leopold, Abdel de Lepinium, Comte de Chambord, Impératrice Eugénie, Laurence de Cerf, Madame Delahaye, Mons. Valéry, Rêve d'Amour.—*William Barnes.*

PENTSTEMON CORDIFOLIUS.

RAISED from seeds brought home by Mr. Hartweg in June, 1848, and said to be a shrub four feet high, from the mountains of Santa Ines, in California.

A downy-stemmed half-shrubby plant, with a trailing or spreading habit, so that it is well suited to hang down over stones or rocks. Leaves dark green, shining, cordate, serrate, slightly downy. Flowers in one-sided, narrow, leafy panicles, which sometimes measure more than a foot in length. The branches of the panicle are hairy, and bear each from three to five flowers when the plants are vigorous. Calyx covered with glandular hairs; corolla not quite an inch and a half long, rich dull red; the tube almost cylindrical; the upper lip straight, nearly flat, slightly two-lobed; the lower three-parted, spreading at right angles to the upper.

It has so little the appearance of a Pentstemon that it may be expected to be regarded hereafter as a distinct genus.

A hardy little shrub, growing freely in any good rich garden soil, and easily increased by seeds or cuttings in the usual way. It flowers freely, one year from seeds, and lasts in flower from June to October.

It is a very desirable, hardy plant.—*Horticultural Society's Journal*.



HINTS FOR LANDSCAPE GARDENING.

IF buildings, vases, statuary, and other artificial works, are constantly recurring in very extensive gardens, they do not produce the variety which is sought for, but produce endless monotony. So many objects having different expression, cannot form the harmonious whole that should be. They are the costly evidences of great wealth made subservient to empirical taste.

No one can wish to mistake a garden for anything but a work of art—a work in which beautiful forms and lines are recognised, while all its parts correspond so exactly, that the removal of any one of them would derange the whole. As a rule, it may be laid down that curved lines are more beautiful than straight ones. We associate the quality of beauty in the feminine form, of delicacy, of fineness, and of tenderness with them; while angular lines are expressive of roughness, strength, tenacity, and maturity, as instanced in the limbs of old trees, and the forms of solid masses of rock.

In disposing the area of a small garden, it will be all-important to consider well the production of harmony of expression; and to make such arrangements only as will assist in carrying out the objects in view. As to ornaments, it is better to have few of them than to fill the place with those of incongruous character; many of which would be as much out of place as a Goth in one of the saloons of Paris.

It is most important, also, to observe that want of breadth is one of the most common errors in amateur designs. The constant spotting over of lawns without attention to producing massive effects by grouping, and the frequent shutting up retiring verdant glades by plants, are sources of much mischief in this respect. In every place there ought to be one or two leading breadths of as much extent as possible: and if an aerial distance can be got at the same time, it will much enhance the effect by leading the spectator to suppose that the property is most extensive in that direction.

Great care should be taken to avoid that regular mixture of shrubs and trees which is too often practised, and which produces the most perfect monotony: it is far better that one kind should prevail here, and another there—a system which produces true variety. When one passes from a grove of Elms to one of Beech, and again to one of Oaks, one feels that “a change has come o’er the spirit” of the scene; but where Oaks, Beech, and Elms are mixed, it is all sameness.

Let us counsel our friends, who are intent upon leading a quiet suburban existence, having finished the toils of commercial life, that, should they purchase a place to exercise their skill upon they should have the opinion of a clever man as a landscape gardener, and have a general plan designed and prepared, after thorough consideration, to be commenced upon, and carried out progressively; thus avoiding the many rocks a-head upon which such people split. Let them, also, get to understand the rules and principles of the art in a general manner. So will their places yield them more satisfaction; and the public in visiting them will be spared the excruciating pain of seeing Grecian bases of the first class standing upon bare earth without any pedestals at all.

In no sphere of his observation has man so many, so beautiful, and so

varied a collection of graceful curves presented to his view as he has in the varied forms and inflections of the stems of gigantic grasses with their nodding plumes of silvery feathers; in the tendrils of the Vine, the Hop and the Ivy; in the stem of the Rose, bent with its fulness of the dew of Heaven into a graceful curve; in the varied and infinite conformation of leaves, flowers, and fruits. It would be sad indeed, if, while having such lessons from the book of the Divine Artist Himself, man should not avail himself of the exquisite delineations of beautiful forms which the book of Nature presents, and appropriate to himself in his gardens those lines of beauty which are so adapted for his purpose.

The exact expression of beautiful lines is an important point in the keeping of a garden. Every curve and sinuosity should be most regular and true; cut with the utmost exactness, if in grass; and trimmed with mathematical precision, if in box or such-like materials. For, however good the design may be, if it is not artistically carried out it will prove a failure.

A small garden well kept is always much more satisfactory than a large ill-kept one. Let no one, therefore, attempt to do too much; but let every person who intends designing a place consider and proportion his means to the end. Thus will the beauty of propriety be given to the creation of artistic skill; and whilst the art of design is prominent in the whole, the beauty of utility and propriety will always conduce to the superior enjoyment of the owner and his friends.

We greatly advocate that, whatever the style of the house, whether Italian, Grecian, or Gothic, all its subordinate offices, whether attached or detached, should be in the same style. We have marked many deviations from this rule with regret.

"Taste," says Mr. Allison, "is, in general, considered as that quality of the human mind by which we perceive and enjoy whatever is beautiful or sublime in the works of nature or art." But in the investigation of the beauty and sublimity of material forms, there are certain rules and axioms to which we must refer as established principles; and it is only by a knowledge of these principles, by study and reflection, that we can lay the foundation of correct "taste." S.

ROT IN GRAPES—A SUGGESTION.

THE Catawba grape seems particularly liable to be affected by a peculiar disease, which is termed rot; the berries when about full grown become spotted and exhibit an appearance very similar in structure and character to a badly diseased potato. Not only is there a similarity in the appearance of the two, but both are greatly accelerated, if indeed they are not occasioned, by wet soil.

Grapes growing on undrained clayey subsoils will generally show the rot after a heavy rain in July; on dry gravelly soils they are seldom affected; or if the season prove dry they will mature perfectly even in the clayey soil. I am familiar with a trellis of the Catawba grape which has only ripened one crop during the past six years, and that was in '56, if I recollect rightly, when we had a remarkably dry summer and fall. The subsoil where they

are growing is very strong yellow loam, retentive of moisture, and undrained. I have observed after a heavy rain in June that the young growths would look rusty and diseased, and the berries invariably rotted.

I have observed the Catawba grape closely for many years, and my observation leads me to believe that the rot is owing to an excess of water at the roots, rendering the ground comparatively cold, at a time when the air is very warm; of course this will be of rare occurrence where the surplus water in the soil passes into underground drains. I would suggest to those who have strong or clayey lands to put in a row of draining tiles under each row of vines, and if there is no convenient fall for the water to pass off, then dig a round pit three or four feet deeper than the drains, fill this pit with broken stones, or oyster shells, and lead the drains into it. The accompanying sketch will illustrate my meaning, and I am very confident that the remedy will be found efficient.

X. Y. Z.



SALVIA GESNERÆFLORA.

I PROPAGATE and cultivate this without heat. I take cuttings in March or April; good plants always push from the base or the roots in March; as these are useless for flowering, I cut them off, and select cuttings from them—strong short bits with three joints. I take the leaves from the bottom joint only, and insert the cuttings singly in the middle of thumb pots filled with loam, silver sand, and charcoal, sprinkling them with water, and covering with bell glasses. I then place them in the shade in the greenhouse, sprinkle the leaves and wipe the damp from the glasses once a day; and thus managed they soon strike. I inure them to the air of the house, harden them gradually, then place them in a cold frame—when the pot is filled with roots, I shift into a pint pot; when that is filled, into a two-quart pot; and when that is full of fibres, give the final shift into eleven-inch pots. They must not be allowed to get pot-bound till they have had the last shift, or they will be stunted. Each plant requires one stick to keep it upright. I never stop the leader, nor any shoot, but let them take their own natural form, which is pyramidal. The frame will preserve them from injury by wind, for I never put the lights on, except to preserve the inmates from frost and excessive wet, and I always tilt them during rain. I introduce the plants to the greenhouse in October, let them have plenty of room and light, and water when necessary. As the pots are very full of roots, I give water till it runs through the hole at the bottom. When the flower buds show color I give weak manure water every watering. If the house requires smoking while they are in bud or bloom, they should be removed to some other place for the night, or they will lose their flowers and forward buds. The soil I use is light loam, mixed with a little old cow-dung and silver sand, and a liberal quantity of broken charcoal.—T. O.

NEVER TOO LATE TO LEARN—OR THE AMATEUR AND M. D. GARDENER.

BY FOX MEADOW.



ON a beautiful morning in the month of July an amateur stepped into a garden of which an M. D. had the charge.

Good morning, sir, said our amateur—so you are pruning and stopping your young pear trees?—Yes sir, and are they not beautiful trees?—Well, said our amateur, they would be, if the trees were properly pruned and managed. The trees are growing luxuriantly, and could be made *splendid and fruitful*, as well as superb pyramids. But, Mr. Amateur, do you mean to say that these are not good symmetrical trees.—Oh, no sir! far from that; they are indeed so much so that they look as though they were cast from a mould. They are from the ground up a perfect pyramid. No blanks nor vacancies of branches anywhere—all, I presume, a great portion of the horticultural world ever dreamt of, or would desire as a tree.—But still, Mr. Amateur, you seem to *smile* at my trees. What is it you are laughing at? Is it because I have no fruit?—No, sir, for in that case I am very sorry.—Then, pray tell me, why smile at my trees?—Ho! *you* are a professional, I am only an amateur—could not pretend to suggest to an M. D. like you.—Nonsense, sir; do tell me what you are laughing at?—Well, sir, I will, and then we shall see if you will not laugh too. Now don't be angry, but don't you see how much time you have spent pruning with your knife *that* tree? Yes, and what have you produced? Nothing but a splendid bundle of sticks. You could have taken any common hedge sheers and given just such a form in much less than one half the time. Why do you not follow the same stumping system on those vines under glass during their growth? You see, sir, you have made your pyramidal pear trees the same way you make those splendid hedges—stop, clip and chop continually and then you have *the* hedge. If these pear trees were only a little closer together they would form a splendid hedge.—But, said our M. D., if we do not cut back and stop, as directed by our best pear-growers in the country, how are we going to produce the *form*, the *pyramid*?—Never mind the best growers in the country, sir; let us do our own thinking, and work out our own plans, and never trust to others to think and act for us. If the Italians had thought and acted for themselves, and not trusted to somebody else, Italy to-day, perhaps, would have been free. We will leave the poor Italians to work out their fruitfulness and *glorious independence*, whilst we work out branches with fruitful spurs on our pyramidal pear trees.

M. D. listened attentively. Then it occurred to his mind that he should like to see or know *how* his amateur friend pruned and trained *his* trees; so the relative question was put, and answered as follows: The difference between our pruning, stopping, training and getting into fruit is this: The tree consists of one main erect stem; the branches are brought out nearly horizontal, equidistant and entire, *i. e.*, free from all lateral shoots,

resembling much in its appearance a spruce fir. How we manage these trees we will now endeavor to explain. First, then, we go to a nursery and select trees one year old from the bud, and stop there till they are got up; we look well after the men who get up the trees, and see that they take hold of them close to the ground when about to draw them—and we watch this part of the operation pretty closely, for if we did not, they would invariably take hold higher up, just where we should wish to cut back the tree too; and by their taking hold on this particular part they rub all the eyes out, and we should be pretty lucky if some of the bark did not go as well. Once they get hold, up must come the tree, eyes or no eyes, and oftentimes roots the same way. The trees are sold; all right, and the boss will get the dimes. I have seen hundreds of beautiful trees completely spoiled through the inattention paid in the handling by the nursery employees.—M. D. remarked that that was the reason why he could not cut back some of his dwarf trees as close as he could have desired, because the buds were rubbed out at the base of the shoot.—Well, sir, I get my trees home sometimes in the way I want them. In planting we bury all the quince and a little more. They will throw out roots from the pear stalk, and the tree is improved by it. The next operation is cutting back, and here we stop, and think, and look a little.

A tree is to be formed.—Let us have the base right. We want four or five good branches and a leader; then we cut back to just as many buds, and we take care at the same time to have the bud that is intended to form the leader (main stem) to be on the side that the young shoots will be perpendicular to its base. Now, if the condition of the soil is right, in the spring we watch the bursting buds, and they come forth with vigor. The side shoots we will call horizontal shoots, and the main stem we will call the leader, for the sake of understanding what we are talking about. Now our horizontals have grown out some six inches; we now nip out their points with the finger and thumb, but not the leader—we allow the leader to grow twelve inches, and then we serve it the same way.

But, Mr. Amateur, what is your object in nipping your horizontal shoots at six inches; is it done to produce two or three shoots from them again?—No, sir, for if that was the case my trees would be just like yours—a *bundle of sticks*. (M. D. looks down.) The object is this, sir: nipped at six inches, all the base eyes, i. e. all the eyes below where we pinched off, burst; one we allow to grow on,—the others form fruiting spurs at once. Should any of these eyes have a tendency to make shoots, you can detect it at once, and you must *make it* a fruiting spur with your *thumb-nail*. Now you understand how these horizontal branches are formed and how the fruiting spurs are produced on them. You see, sir, you can extend to the length you please, and stop the same at pleasure. Now, in reference to the leader; we stop it at twelve inches, and being allowed to grow twelve inches instead of six, it has gained a little more strength.—But, the object, Mr. Amateur, of stopping by so much rule? We want another tier of horizontal branches, sir, and coming from the leader twelve inches above the others, is just close and far enough apart. We also look about on this new wood to see *where* the eyes are going to break, for we want this tier of young shoots to intersect the first, so that when the tree is fully formed every tier of branches sits alternately to each other. You will also find that after you have stopped the leader, it will not break, perhaps, more

than three horizontal shoots ; the leader we allow to grow on through the season and next spring cut it back to four eyes, giving a leader and three more horizontals ; in this way the tree is furnished with branches from the ground up ; no branch interferes with another, and each branch is properly spurred. Each branch of the same strength capacitated to carry its respective weight of fruit. The power of the tree is equally balanced. This balance of power we must watch,—it may trouble us a little in the branches of fruit-trees, but not half so much as it troubles the crowned heads of Europe. If we get a branch that inclines to grow weak, let the stopping alone,—let it gain its balance, but take care and stop the others, if anything *more* than before, for by doing so you throw the sap into the weaker channel.—You grow your *fruiting spurs*, Mr. Amateur, on your horizontals, I see, without the knife?—Certainly. Suppose you take a young tree and head it in every year with the knife—I mean constantly stump it down—when would you expect to get fruit from it?—M. D. smiles,—thinks he has been doing the same thing with his dwarf pear-trees. This has been a long chat, Mr. Gardener, so I bid you good-day.—M. D. thinks he understands what his amateur friend means,—thinks he can *see through a pear-tree*, and laughs at his own. *No wonder they do not fruit*,—(wonder how many thousands of *bundles of sticks* there are in the world beside his own,) and believes, too, that it is NEVER TOO LATE TO LEARN.

DISEASES OF FRUIT TREES.

BY J. W. FELT, CRYSTAL SPRINGS, MISS.



BELIEVING your valuable periodical is extensively circulated through the Southern States, I desire making it the medium through which to give some hints upon fruit-culture that I deem of importance in this latitude.

The observant frequently notice the bark upon the stems of trees, and especially the apple, perforated with numerous holes, sometimes of sufficient size to admit the moisture and encourage decay. What causes these holes, and how are we to prevent their formation?

In order to discover a remedy we must consider the manner in which they are formed.

These holes are first made by worms, and enlarged by birds in search of the grubs. The grub is hatched from eggs deposited under the shaggy bark so frequent upon the stems of fruit trees. This rough and half disconnected bark is the result of an inactive circulation of sap ; the same as the hand becomes callous by constantly grasping some hard substance, and interfering with the free circulation of blood. This imperfect circulation of sap, I think, is the result of training the trees with too *long stems*.

If the trunk of the tree is too long, the top does not protect it from the sun's rays. While the sap is ascending from the roots into the top, a considerable portion of its aqueous substance evaporates through the bark,

leaving the remainder thick. The sap vessels become filled with a gummy substance which obstructs the free circulation, and causes the rough, hard bark to accumulate.

As the tree increases in age and size, this hard bark forms a perfect shell around it which greatly impedes the free circulation, especially when the sap is in the condition above mentioned. If the tree possesses a sufficiently vigorous constitution to continue growing, it will burst this shell, if not, it will struggle along for several years and finally die. After the increase of the stem has forced this hard bark to crack, the sun causes it to warp up, forming scales, and affording excellent places of refuge for insects to deposit their eggs.

If trees are trained with low heads there will be no stem, or at least not much to become diseased, or for insects to prey upon. The top will shade the stem and roots; keep up a greater equilibrium in the temperature of the soil; guard against drouth; admit of an active circulation; and by saving the constituents of water, which would, to a certain extent, be lost by evaporation if compelled to ascend through a long unprotected stem, afford the fruit a greater proportion of hydrogen, an element which exerts a great influence over the flavor of the fruit.

That disease known as the frozen sap blight, and so destructive to pear-trees in this vicinity, is more prevalent in seasons succeeding a warm and late fall, terminating with a sudden freezing. The disease I consider is caused as follows: The late warm weather peculiar to this climate some seasons, recommences an active circulation late in the fall, which fills the sap vessels with aqueous substances, and more particularly the young and topmost branches. The rapidity with which cold weather commences does not afford sufficient time for the watery substances within these branches to either enter into the formation of woody fibre or pass off by evaporation, consequently remains within them as such, and when frozen increases in volume, tears the sap vessels, and establishes a disease which makes its appearance the following spring.

If the tree had been trained with a short stem, the top with its cooling shade would not have permitted the soil to become sufficiently warm to excite the tree into a late growth; circulation would have ceased, and the leaves have dropped off at an earlier period in the season; the new growth would have had sufficient time to attain some degree of solidity, and the tree would be free from all danger of frozen sap blight.

It is frequently observed that dwarf pear-trees are comparatively free from this disease.

This peculiarity is very easily explained when we consider they are not only trained with short stems, but by being worked upon the quince, discontinue growth sufficiently early in the season to admit of the watery substance, either entering into the formation of woody fibre, or to pass off by evaporation, thereby affording sufficient time for the new wood to become able to withstand the vicissitudes of the weather.

The benefits the tree derives from a low head are quite as perceptible in the spring as in the fall, as the shade produced by the top retards the period of blossoming, and frequently prevents the fruit from being destroyed by late frosts.

The length of the stem also increases the danger of having the fruit blown off, in which case the fall is sufficiently great to render it worthless.

The force of the wind against the top, by acting upon the lever principle, causes a great strain upon the roots, often displacing or breaking them, and frequently overturning the tree. If the stem is sufficiently long to admit of its bending, the sap vessels on the *outer side* of the curve will be forced to *expand*, while those on the *inside* will *contract*. Both positions being unnatural extremes, exerts a ruinous influence upon the health and longevity of the tree.

Many persons object to low-headed trees as they do not admit of ploughing underneath the branches. If they would consider tearing up the soil, and bruising or breaking the roots immediately near the stem, in a manner so frequent among orchardists, they would not only discover they were destroying the facilities of the tree for obtaining sufficient aliment to mature properly,—even a medium crop of fruit,—but injuring the surface roots upon which the tree is greatly dependant for a large proportion of the animal and vegetable matter essential for its formation.

While cultivating fruit-trees at the South, I have permitted the following rules to direct my operations. My success thus far has exceeded my own sanguine expectations.

1st. Get good healthy Southern raised trees, of such varieties as require the conditions peculiar to a warm climate for their perfect development.

2d. Plant them on fertile land, and keep the soil in good condition.

3d. Train the trees with short stems. Two feet in height is sufficient for standards.

4th. Brush off all superfluous shoots *while small*, and *never* let a branch grow unless wanted.

5th. Trust the remainder to Providence, and my word for it, you will have fruit.

ABOUT THE POKE-WEED.

BY J. STAUFFER, LANCASTER, PA.

THE genus to which our common Poke belongs, was named *Phytolacca*, by Tournefort, a barbarous combination of the Greek, *plant*, and *lacca*, a coloring substance like Lake or Laque, or, as Dr. Gray states, the French *lac*, which the purplish, crimson color of the berries resembles when fresh, but every school-boy knows how speedily it turns to dirty yellow; which may again be restored, however, by the application of an acid.

Parkinson, in his *Theatrum Botanicum*, published in 1640, denominates it "*Solanum Magnum Virginianum rubrum*." This is one of the oldest accounts found of it. Plukenet conjectures it may be the *Cuechiliz tomatl* of Hernandez, so vaguely described. The plant is now found in Europe from Portugal to Greece, and in the Barbary States in Africa. There are seven species described; viz.: 1. the *P. Octandra*; 2. *stricta*; 3. *Abyssinica*; 4. *decandra*; 5. *icosandra*; 6. *dioica*, and 7. *dodecandra*—thus making sad havoc in the *artificial classifications of Linnæus*, as their several names imply; we have but one species common to the United States; this has ten stamens and ten styles, and is the *Phytolacca decandra*.

This well-known weed, called *garget*, *cocum*, *jalap*, *pigeon berries*, and commonly *Poke*—corrupted from the old Virginian name of *Pocan*, needs no special description, being so abundant in all parts of the United States, flourishing along fence rows, on the borders of woods, and in newly-cleared and uncultivated fields. Flowering in July, and ripening its crimson fruit in autumn.

The annual stems often attain the height of from 6 to 10 feet. Those were cut for walking-sticks, and paraded in the political processions, by the partisans of Jas. K. Polk, of Tennessee, as significant emblems, in the campaign of 1844, as many will remember in our section, at least.

Poultry and birds are fond of the berries, but if eaten in large quantities, they give the flesh a disagreeable flavor. The juice contains saccharine matter, which, after fermenting, yields alcohol by distillation. "From half a bushel of the berries, six pints of spirits were obtained, sufficiently strong to take fire and burn with readiness. Two ounces of this given to a dog occasioned nausea, drowsiness, spasmodic motions, but no vomiting."—*Loudon*.

A few drops of lime water added to the purple juice of the berries, change it to a yellow color: this yellow liquid Mr. Braconnot considers the most delicate test, and found it to be four times as sensible to the presence of acid as that of the infusion of litmus—requiring, however, to be used immediately after it is prepared, since a few hours cause a spontaneous change in it, ending with a deprivation of color.

"Poke-root is emetic, purgative, and somewhat narcotic; in over doses it produces excessive vomiting and purging. The dose of the powdered root as an emetic is from ten to thirty grains; as an alterative from one to five grains; a saturated tincture of the berries, in dilute alcohol, is useful in rheumatic cases, in the dose of a fluid drachm three times a day. A strong infusion of the leaves or root has been recommended in piles. An ointment prepared by mixing a drachm of the powdered root or leaves with an ounce of lard, has been used with advantage in cutaneous diseases. It has also, in the form of an extract, acquired considerable reputation in the

PHYTOLACCA DECANDRA.



cure of every kind of cancerous disease.”—*Extract from the United States Dispensatory.*

The following two letters from Dr. Franklin—one to Dr. Colden, the other to M. Dubourg—may be of interest, as a matter of history, and are appended in conclusion :

“I am heartily glad to hear more instances of the success of the Poke-weed in the cure of cancer. You will deserve highly of mankind for the communication. But I find in Boston they are at a loss to know the right plant ; some asserting it is what they call Mechoacan, others other things. In one of their late papers it is publicly requested that a perfect description may be given of the plant, its place of growth, &c. I have mislaid the paper, or I would send it to you. I thought you had described it pretty fully.”

DR. FRANKLIN TO M. DUBOURG.

“I apprehend that our Poke-weed is what botanists term *phytolacca*. This plant bears berries as large as peas. The skin is black, but it contains a crimson juice. It is this juice, thickened by evaporation in the sun, which was employed. It caused great pain, but some persons were said to have been cured. I am not quite certain of the facts ; all that I know is that Dr. Colden has a good opinion of the remedy.”—NOTES—*Bigelow's Medical Botany, Vol. I.*

[Some country people who are too lazy to make an asparagus bed, boil and eat the young shoots with a little vinegar, finding it very palatable. For birds in cages, especially the robin, the ripe berries are much employed. —ED. H.]

GOLDEN HAMBURGH GRAPE.*

BY JOSIAH SALTER, ROCHESTER, N. Y.

THE grapes which I sent to you in April were the fruit of a new variety, called the Golden Hamburg, which I imported with some others from England in the spring of 1858. The plant was not a very large one, being only a guinea vine, and I planted it in a 7x9 glass box, in which it stood during the summer in the cold grapery. Being somewhat impatient to see its fruit, I placed it in the propagating house during the winter of 1858-9, without allowing it any rest after it had ripened and shed its leaves, and on the 24th of January the vine was in flower. It set admirably, although in mid-winter, and by the 1st of April the grapes were fully ripe—thus being, as I believe, the first of this variety fruited in this country. The vine produced several bunches, which all set well, as I said before ; but 1st, because of its very small root room ; 2d, the size of the vine ; 3d, the fact that it had had no rest ; and 4th, the season of the year,—only three of the bunches were allowed to come to maturity ; but these ripened perfectly.

The one which was drawn for the *Horticulturist* was the best shouldered bunch of the three ; but the berries were not the largest, nor were they as fine as of the other two. Had there been but one bunch, as erroneously

* See Frontispiece.

stated on page 284 of this year's *Horticulturist*, it probably would have been finer and its berries much larger. Many of our Rochester gardeners and amateur grape-growers came to see and to taste the fruit, and all pronounced it "truly excellent," "first-rate," "the best of white grapes," &c., &c. The skin is thin and tender, the flesh is tender and delicate, very juicy and luscious, and I think its flavor superior to that of the Black Hamburg.

The Golden Hamburg is a new and perfectly distinct variety, originated at Stockwood Park from the Black Hamburg, impregnated with the Sweetwater. The first premiums were awarded to it in 1853, and it has since then maintained its high character, and steadily received premiums, certificates, medals and diplomas, each year it has been shown. Its habit of growth is somewhat between that of both its parents, its wood being round and firm, short-jointed, and of a whitish green color. Its foliage is large, like the Hamburg, but of a lighter and brighter green, sometimes lobed, and its veins and midrib tinged with bright red or crimson. The bunches are well shouldered, and the berries hang loosely on the bunch; it is a good setter, and requires good thinning. The berries are large, many of them being an inch long and seven-eighths of an inch in diameter, of an oval form, and of a pale yellow color.

If a young vine will do as well as this has done without any "rest," and with every circumstance unfavorable, a mature vine will assuredly do a great deal better in summer, after its seasonable rest, with its roots in a vinery border, and its branches trained to the rafters. This Golden Hamburg is destined to become among white grapes what the Black Hamburg is among black grapes—the best of white grapes for a cold vinery and also for pot culture.

[The above is a correct statement: the figures we have on hand of this grape as grown in England on mature vines, represent the berries as considerably larger than our plate, and of a deeper golden color; in fact, the picture of the bunches was too large for our pages, and we waited for some time to get an American representation such as we could endorse, and it is now presented to our readers. The flavor of this fine acquisition is delicious. It has also been fruited in Philadelphia, and probably elsewhere, and has excited a very lively interest with grape-growers wherever exhibited.—Ed. H.]

NEW PLANTS AT HENDERSON'S & VEITCH'S, LONDON.

MR. J. APPLEBY communicates to the *London Cottage Gardener* the following list, with observations on their most striking new plants:—

Maranta metallica.—This is a new species, of a compact low habit, with the midrib and veins beautifully silvered over. It is from tropical America, and well worthy of culture. Increased by division.

Aspidistra variegata.—A stove plant from Japan, with leaves springing from the rootstock. They have stalks a foot high; and are fifteen inches long and six inches wide; lance-shaped, tapering to a point. Ground color a dark green, striped with pure white. The variegation is very irregular: in some leaves one side will be all white; on others, the white is regular in long lines. The variegation is most perfect when the plant is grown in

very sandy soil. The flowers are very curious both in form and position : they only just peep out of the soil. It is a very useful exhibition plant, the variegation being so distinct. Increased by division.

Maranta eximia.—A beautiful distinct species, regularly striped across each leaf with whitish-green and dark green. The under side is a rich copper color; form bluntly oval, ten inches long by five inches broad. Increased by division.

Solanum pseudo-capsicum variegatum.—A greenhouse species from Madeira. Half shrubby. Leaves a long oval, irregularly margined with white. It has small white flowers, succeeded by round yellow berries. Should be increased by cuttings, in order to keep the variegation. Though not so showy as many variegated plants, yet, on account of the variegation being so profuse and distinct, it is well worthy of a place in a collection. It thrives best in a moderately warm stove.

Begonia Griffithsii, var. *picta*.—A handsome medium-sized plant from South America. Leaves nearly round, and of a dark-green color; with a zone in the middle of a greenish-white. The zone shows through the leaf. Underneath, the color is crimson. Increased by cuttings; though there is little doubt it would increase by laying a leaf on sand in close heat, dividing it in many pieces in the same way that the beautiful *Begonias* raised from *Begonia rex* are increased.

Anæctochilus striatus, var. *pictus*.—A distinct lovely species, supposed to have been brought by Mr. Gibson from the Khosea Hills, India. It is a beautiful plant, with a distinct stripe of golden yellow down the centre of each leaf. Whoever has the means to grow *Anæctochilus*es should procure this variety. It requires the same treatment as the rest of the genus. See former descriptions, and what I have to say about the tribe when describing what I saw at the next and last nursery I had a peep at—viz. : —

Messrs. Veitch & Son, the Exotic Nursery, Chelsea. The collection of Orchids in this far-famed nursery, is, perhaps, unequalled in the world. There I saw, for the first time in bloom, the rare *Angræcum sesquipetalis*, with flowers seven inches across, and of a leathery substance, and a rich creamy-white color. Also a lovely new *Cattleya*, with deep purple sepals and petals, and a lip of a rich crimson color. It is not named yet. The flowers are five inches in diameter. Also a new *Cypripedium*, with its foliage broadly striped with pure white. It was not in bloom.

Messrs. Veitch possess the greatest number of the lovely-foliaged *Anæctochilus*es I have ever yet seen. They grow them planted out in rows, under a two-light frame, in a hot stove, in a compost of sphagnum and very fibry peat, largely mixed with silver sand.

Besides the older sorts, I noted *Anæctochilus cordatus*, which seems to thrive the best of all in that frame. The leaves are more distinctly marked than *A. setaceus*, and even richer in metallic lustre.

A. El-Dorado, has lanceolate leaves, terminating in a point. Over the whole leaf there is a rich, reddish cast; which, together, with the golden streaks, renders this a strikingly distinct species. It is new and rare even here.

A. Veitchii, has light green veins; the rest of the leaf is of a lustrous dark-green. This is, also, new and rare. It is from Java.

A. Lobbii.—This species is in the way of *Veitchii* in colors; but has longer leaves, and, altogether, darker in hues.

A. Maulii.—Named after Mr. Maul, nurseryman at Bristol, who, I believe, imported it from India. It is in the way of *A. zanthophyllus*; but the broad stripe down the centre is much narrower, and, I think, more distinct.

I had some difficulty in withdrawing from these most beautiful and interesting plants; but night was approaching, and so I reluctantly left them.

FRUITS: ON WHAT DO THEIR QUALITIES DEPEND?

I AM well aware that this is a question which no person is able fully to answer; involving, as it does, so many considerations, and so many debatable points, which await a vast amount of inquiry before they can be determinately answered. Such, however, constitutes no solid ground for avoiding an investigation. Our Pomological societies are doing the State some service in this matter. No man, however experienced, but may enlarge his mind by examining the statistical information that their reports contain. I verily had thought that I knew all about the *Winter Nelis* Pear—a great favorite of mine for years; but I could not but feel that I had acquired interesting information in comparing the various conditions, both above and below ground, which certain exhibitors furnish: added to this, there was the testing of my own opinions as founded on what I had experienced. I do hope that those who continue to exhibit will carefully state a few of the main conditions under which the fruit was produced. No man can put such information to better use than a really good gardener—a man experienced in such things. There is no spoiling him with crude notions; and, after carefully digesting the whole, he is in a capital position to sum up the evidence, and, as Burns said, to “prent it.”

On what conditions, then, does the quality of fruits depend? Let me first state what conditions are inimical to quality in the average of fruits:—The ripening too much hurried; ripening, in some cases, arrested through low temperatures; excess of root-moisture; also of humidity in the air; gross and succulent growths; deficiency of light; a stagnant air through the want of a due circulation; and lastly, the attacks of insects.

Now, these remarks, although applying, in some cases, almost exclusively to in-door fruits, I intend to offer in such a shape as to be common to all.

A forced or hurried ripening, whether occasioned in-doors or out, is in general averse to high qualities. This may be particularly observed in peaches and melons; and is doubtless the reason why fine-looking fruits, at our exhibition tables, frequently do not possess those high qualities which their appearance and kind indicate. We also know, that, in hot climates, many of our fruits become vapid and worthless; but Nature has provided special kinds adapted to the climate. It is here necessary to observe, that an over-slow or retarded ripening is, in some cases, prejudicial; and this is, perhaps, most manifest in some of our pears, which, if kept much beyond their natural ripening period, assume the character of petrifications in some cases.

Excess of root-moisture is to be avoided. Thorough drainage out-of-doors, and a cautious use of the waterpot in-doors are the means within our reach to avert this evil. Fruit-bearing plants are apt—like many of the animal creation—to prove gluttonous, especially when there is a heavy draw on

their system ; and in the ripening process, where very high flavor is desired, we do not want too much of the water :—it is more on the high and perfect elaboration and assimilation of the stores of the plants that we have to depend. Nevertheless it may be laid down as an axiom in fruit-ripening, that the foliage must be in a perfectly healthy condition when the fruit is ripening, or undergoing that change which forms a crisis in their history. Thus we find, that if melons—it matters not what kind—have decaying foliage when the fruit is turning for ripeness, the flavor is sure to be deficient, and the eye-part becomes spongy. It, therefore, becomes necessary with all thin-foliaged fruits (which, of course, are liable to sudden and profuse perspirations), to keep up as much moisture at the root as will sustain a healthy foliage.

Too much air-moisture is, of course, not desirable. This, out of doors, can scarcely be avoided ; but, in forcing processes, it is under control. It produces an inactive atmosphere, and not only impedes, in degree, a free transpiration, but also a proper admission of light. In fact, the ripening period is no proper time for any undue amount of absorption.

We will come now to succulent growth, as, in most cases, a foe to intensity of flavor. The peach is, at once, a good instance. How is it that we seldom obtain such large and fine peaches from young and gross trees that we do from those arrived at maturity ? Simply because the growth, at extreme points, being so exuberant, much of the collateral and subordinate wood is robbed for the sake of this great impulse. Pinching these robbers, therefore, in equalizing the sap, causes the inferior portions to receive a more regular supply. In short, the remarks apply to almost every kind of fruit, especially to those of rapid or impulsive growths. Thus, we know that it is a common practice to stop or pinch pines, melons, cucumbers, &c., all of which are of rapid growth.

Deficiency of light is the next consideration as concerns flavor and quality. It is well known that both flavor and color, in fruits or vegetables, can only be obtained through the influence of a liberal amount of solar light. But not only is flavor in fruits dependent on a liberal amount of light ; their size and general character are also particularly concerned in the affair. Who has not noticed the inferior character of fruits, such as apples, pears, and other ordinary fruits, in the interior of badly-pruned or neglected trees ?

A free circulation of air is of the highest importance in giving flavor and character to fruits. This, it may be said, more immediately concerns those under glass ; inasmuch as the means taken to secure light out of doors will guarantee a free circulation of air. Melons coddled for want of air can never be full-flavored. Indeed, the richest I have ever tasted have been from frames or pits, which had air liberally all night as well as day : they were, consequently, ripened by the slow process. Peaches, too, require abundance of air all the time they are ripening, and they must have time.

Freedom from insects is indispensable to flavor in fruits. Who has known good grapes, melons, peaches, &c., produced from trees infested with red spider ?

I think these together are essentials to the production of first-rate fruit, and without a due attention to them, such cannot be obtained. But, of course, as the foundation-stone, we must have a healthy and well-conditioned root and good kinds. That atmospheric influences—heat, light, air, &c., variously

modified and combined—produce varying results in the fruit, can be well evidenced on all sides. We gather *Marie Louise* Pears from a generous aspect on a wall ; the fruits large, finely-skinned, and of a beautiful creamy appearance ; we fancy we can almost see into them without cutting. We take a second lot from well-handled espalier, or ordinary tree : they are but two-thirds the size, and their skin a complete coat of fine russet. The first shall be exceedingly fine in texture, but the flesh not particularly rich ; the latter less fine in texture, but of a much higher flavor. This at once points to differing atmospheric conditions, the soils being alike.—R. ERRINGTON, —in *London Cottage Gardener*.

GRAFTED CONIFERS.

BY MR. W. PAUL, OF THE CHESHUNT NURSERIES, HERTS.

I HAVE long been satisfied that the popular prejudice existing against grafted Conifers has no substantial foundation, *provided proper scions and stocks are used*. But in no branch of horticulture is this matter more important, or worthy of more attentive study. It is unfortunate for purchasers that unsuitable natures should so readily unite to assume the appearance of healthy and perfect trees, while in reality they contain within them the seeds of decrepitude and early death. We could almost wish it was not so ; but, as it is so, the best guarantee against disappointment and loss rests in the intelligence, experience and honesty of the cultivator.

It is well known that the heavy wooded Pines—as *Pinus ponderosa* and *P. macrocarpa*—will grow very well if grafted on the Scotch Pine ; but, so treated, they soon over-swell the stock, become top-heavy, and pass into a stunted and deformed state. If, however, these kinds are grafted on the Austrian Pine, *and the scions are rooted from the lower end*, perfect and durable trees are the result. And this is but an example where many cases of a like nature might be adduced.

But there is also an objection against grafted plants existing *in point of time*, rather than in fact. If *side-shoots* of *Pinus* and *Abies* are used as scions, however suitable the stocks, a portion only will form leaders, and these at long intervals of time. Such, therefore, should not be purchased until they have attained the condition of perfectly-formed trees, with good leaders ; or the purchaser may have to wait for the *dénouement* somewhat longer than is agreeable.

Once more. Using a tender stock, as the common Cypress, or China Arbor Vitæ, for the genera *Cupressus* and *Thuja*, is objectionable ; because such plants are liable to be killed at the root in case of severe frost. With these exceptions, I cannot see why a grafted Conifer should not be as good as a grafted Apple or a grafted Pear ; and if the objections rest only on prejudice, it is most desirable that they should be removed.

Let me now adduce one or two facts in support of these opinions. Many years ago, I commenced forming an arboretum, intended to contain specimens of the most valuable hardy trees suited to the open air in the climate north of London ; and these now amount to nearly 1000 species and varieties, gathered from various sources, at home and abroad. At the outset,

many of the Conifers could not be obtained otherwise than grafted, nineteen out of twenty of which are now handsome and flourishing trees. *Pinus Lambertiana*, grafted on *P. excelsa*, is fifteen feet high, and everything one could wish for. *Pinus macrocarpa*, grafted on the Austrian Pine, is sixteen feet. An incident in the history of this latter tree may not be uninteresting to your readers, as showing the advantages arising from the application of such horticultural knowledge as we may possess.

The first year after being turned into the ground, the plant made but little progress, which led me to suspect that all was not right at the root; accordingly, in the month of October, the soil was carefully removed; when lo! the scion was found overlapping the stock on one side. The fact was unsatisfactory, but the remedy was apparent. The point of a knife was inserted two inches above the line of junction, and passed through the bark, drawing it downwards the length of four inches. The projecting portion of the scion, which extended and formed callus nearly the half of its circumference, was then pared down with the knife, and the soil firmly replaced. Two years afterwards, the soil was again removed, and the other half of the scion, although firmly and satisfactorily united, was served in the same way; an abundance of roots was emitted from these incisions; the plant soon commenced growing vigorously, and is now as handsome a specimen, for its size, as any in the kingdom.

Take another instance. A small plant of *Picea nobilis* was purchased of the late Mr. Cunningham, of Edinburgh; it was a mere side-shoot grafted on the Balsam, or Silver Fir. For five or six years it retained the lateral growth; a leader then sprung into existence, favored by pruning and liberal feeding; and the tree is now ten feet high, as symmetrical as if it had been cast in a mould.

While speaking of the *Picea nobilis*, I may, perhaps, be allowed to express the opinion that grafted plants may be preferable to seedlings, unless the latter have been raised from foreign seed. It is said that much of the seed perfected in England is the result of artificial fertilization with the Silver Fir. Now, if this is so, is it not probable that the seedlings will partake, in some degree, of the nature of each parent? And if the habit of vegetating before the spring frosts are gone—natural to the Silver Fir, but from which the *Picea nobilis* is happily exempt—be transmitted to these seedlings, they will clearly be of little value; for, while of matchless beauty, the greatest value of the *Picea nobilis* attaches to the fact that it does not grow until late in spring, thereby escaping the damaging effects of the late frosts.—*The Scottish Gardener*.

COMMERCE AND PACKING OF TABLE FRUITS.

BEFORE the establishment of railroads in France, the culture and commerce of table fruits had only importance in the immediate neighborhood of the large centres of population. Everywhere else, these products, difficult to transport, wanted the means of rapid communication. Another difficulty arose from the production of the fruits being limited by want of local consumption, even where the soil and climate were the most favorable for their production; and in years of the greatest abundance, the larger part of

them were lost for want of means of exportation, while other countries, less favored, were entirely deprived of them.

Happily this sad state of things is to end. Now that railroads furrow the whole country, fruits are easily conveyed to where they are needed, even to great distances. Peaches and figs from Provence and Roussillon come to Paris and Lille, and the apples of Auvergne and Normandy are eaten in Marseilles.

To show the rapid progress of commerce in fruits, the Orleans railroad carried to Paris more than twice the amount in 1858 than it did in 1852; more than double the quantity, in the space of five years.

Besides this interior commerce, it is an object to export largely. England, the north of Germany and Russia, buy every year a large proportion of our orchard products.

The adoption of the following measures will help the development of this industry:

First. To make known all improvements by which the highest prices may be produced from a fruit garden or an orchard, by the help of the best theoretical and practical instruction. We have tried to do this everywhere within our reach, both in Paris and elsewhere. In 1858, we gave 360 theoretical and practical lectures of an hour and a half each, to an audience of 3000. We must continue this, and organize in every department some mode of teaching arboriculture.

Second. When fruits are to go some distance, only those of the *first* quality must be raised. These products having an intrinsic value, can be sold at a sufficiently remunerative price to pay for packing and freight.

Third. To cultivate in each locality only those fruits which grow without especial care.

For instance, choose a climate analogous to that of Anjou for raising Pears. A moist climate like Normandy or Auvergne for Apples, &c.

Fourth. To use a suitable means of packing for fruits sent distances.

This greatly neglected subject we will examine now.

PACKING FRUIT.

Fruits with Tender Skin.—The four following conditions are necessary for the safe transport of these kinds of fruit:

1st. To pick them a little before they are quite ripe.

2d. To wrap them and separate each one, with something elastic that they will not be bruised by each other.

3d. To use white wooden boxes of the lightest possible kind to pack them in, of a size adapted to the fruit. Not to have more than one or two layers of fruit.

4th. To fill the boxes just full enough to leave no room for shaking, that would displace the fruit.

Peaches should be packed with only one layer; placing rolls of paper round the side of the box, each peach wrap in one or two vine leaves separating them by oats. Finish by laying a roll of paper over the top. Thus packed, they will go, without any decay, from Marseilles to London.

Apricots, Plums and Figs should be packed in the same way, with the only difference of putting two layers in one box.

Cherries will bear to have three or four layers.

Strawberries are more difficult of transportation than any other fruit, on

account of their consistence and rapidity of decay. Strawberries may be placed in dry earthen vessels holding about a quart.

Filled and covered with paper, they are laid in large baskets, one above the other, separated by straw. The strawberries then reach Marseilles after a two days' journey. We think that this kind of packing might be adopted everywhere, even for the largest strawberries, by leaving them on the stalk.—*Revue Horticole*.

EARLY NORTHERN MUSCADINE GRAPE.

BY P. G. BETHOLET, OLEY, PA.

MR. ERNLIN, late editor of the Pennsylvania Farm Journal, furnished me with a fine vine two years ago. It was carefully planted among other varieties at a long grape arbor in my garden. It grew finely, and bears this season for the first time; some three dozen bunches of medium size, with fine berries, rather large and free from disease, while the Isabella is more or less afflicted, and the Catawba is a total failure on the same trellis.

The grape is now ripe, while the Isabella is just assuming the amethystine hue. It is a vigorous grower, perfectly hardy, and altogether makes quite a fine appearance.

The color of the berry is a beautiful red, in this respect resembling the Catawba.

Quality—It was claimed to ripen four weeks before the Isabella. It is here only two weeks in advance of it. It is yet a very early grape, and on that account desirable: but in many other respects it does not come up to the announcement.

The general appearance of the vine is somewhat foxy, the leaf, too, shows some alliance to that species, and worst of all, its taste is rather tart and foxy and even its smell is foxy; this latter feature is so prominent that it is quite characteristic, though only a unit under my large grapery. In short, then, it does not quite meet my expectations, for really we have fox grapes growing amongst our hills, just like it in every respect; color, taste, smell and time of ripening; which have, for some time, been planted in the gardens of this vicinity.

It should, however, not be despised, let it be what it may. It has yet much to recommend it. The grape, certainly only a second rate one, is yet much better than none, and this, it is likely from present appearances, will furnish us when all others fail.

By all means I would not do without it, though it does not exactly meet, what was claimed for it, to make it sell perhaps; it is not to be blamed for that. It grows rapidly, is hardy, and yields us fruit when many others fail us.

MR. CHORLTON'S NEW STRAWBERRY.

J. JAY SMITH, ESQ.—DEAR SIR :—The enclosed drawing is a correct representation of a seedling strawberry (Chorlton's Prolific) which I raised seven years ago. The whole branch from which this was taken off contained twenty-two berries. It is a cross between Iowa and Burr's Pine,



and, like both of them, an early variety. In form the fruit bears unmistakable evidence of the latter parentage, while the growth of the plant is equally vigorous with the former, and does not burn in summer. It was tested this season alongside of Wilson's Albany, and was more productive

and better flavored than that excellent variety ; the berries are equally large, but not so dark-colored. During the last five years I have made it the principal family crop, and have never had it fail ; even when all others were a partial disappointment, this was a surety. Several friends who have grown it, testify to all of my own experience, and I feel confident that it will prove generally, one of the most profitable berries in cultivation.

The plant is a strong grower ; leaves large, dark green and leathery, with well-rounded serratures ; flowers hermaphrodite and showy ; fruit borne on strong footstalks above the foliage, light red, melting and sweet, somewhat pine-shaped, with a neck at the calyx, which renders it easily removed in gathering. With good culture many of the berries will measure from four to five inches round. From a bed planted five years ago I gathered many which were fully four inches, and the soil of very indifferent quality.

It has only been twice before the public, viz.: four years ago as one in a collection of four varieties, which gained the first prize at the New York Horticultural Society, and this season, without competition, at the Farmer's Club in the same city, when it was very highly spoken of. Not having any plants for sale, I have been indifferent in obtaining notoriety for it, and send on to you nothing but a candid statement of my proofs.

Yours, most respectfully,

WM. CHORLTON.

New Brighton, Staten Island.

CHERRY GOSSIP.

BY JOHN B. EATON, BUFFALO, N. Y.

NOTWITHSTANDING the frosts of June, which materially injured some varieties, the cherry crop, in this vicinity, so far as I have observed, has been a fair one. I have had an opportunity of examining nearly fifty varieties, (a larger number than I ever before tested in one season,) some thirty-five of which I fruited at home. A few of these were quite new to me, but the greater part of them I have tested at least once before ; and as the cherry department of your journal has of late been rather slighted in the pressure of the various pear and grape controversies, I will give you my opinions of some of my favorite sorts for what they are worth.

Without intending to join in the cry against the introduction of new varieties, which is becoming the fashion with many people, on the ground that "there are already too many," and that "there are only a dozen sorts worth cultivating," it is my impression that many of the cherries (not to mention other fruits,) now extensively grown, might better be discarded in favor of superior sorts, of which we have now such an abundance.

The chief difficulty in the way of such a movement is the wonderful diversity of taste which exists both among cultivators and consumers. I do not believe that twenty people could be found in this county who would unanimously agree upon the merits of as many varieties of cherries, pears or apples. Scarcely a fruit can be named, however worthless, that has not at least one friend who considers it too good to be rejected ; still I am in favor of dispensing with all fruits which are not at least as high as "good" in the pomological scale, and coincide entirely with the ideas expressed in

your editorial on the subject of fruits "for market purposes," in the last volume. I am aware that I differ on this point from some of my fruit-growing friends, who contend, that if a pear or a cherry "will sell," it is not to be cast out, either from the orchard or the nursery, no matter how unsatisfactory it may prove to the occasional purchaser who *has* a perception of what constitutes a good fruit, although he may not know, at sight, the good from the worthless, and is naturally attracted by a showy exterior. I have been sometimes accused of placing my standard of excellence too high, but am not yet convinced that it is not best to aim at perfection, and attain it as nearly as possible.

The varieties which I class as "best" are Belle de Choisy, not very fruitful; Black Eagle, in my estimation the very best cherry within my knowledge, and not open to the objection frequently urged against it, of being a poor bearer; Coe's Transparent, very delicate; Downton, the best light colored variety that I know, and only second to Black Eagle.

I consider "very good," American Amber, rather small; Bigarreau, or Graffion, very fine, but rather firm for my taste; Bigarreau de Lyon (?), which improves with the age of the trees, and was this season magnificent, fully equal in size and flavor to Black Tartarian, and ripe about the 20th of June; Black Tartarian, not considered by me, as by many, the very best; Burr's Seedling; Downer's Late, capital when perfectly ripe, but unlike some others, quite uneatable until it is so; Elton, very fine, but, to my taste, a little deficient in flavor; Florence, a very close imitation of the Bigarreau. Its ripening a week later, does not, according to my experience, prove constant; Knight's Early Black, one of my favorites, but, I think, rather a moderate bearer, at least on young trees, and not so early as B. de Lyon (?); Late Mayduke (perhaps a local name), later and more heart-shaped than the Mayduke, and somewhat firmer, but quite distinct from the genuine Late Duke; Mayduke, the best of the acid cherries that I have yet seen, and the most useful of all, capital alike for eating and cooking. If restricted to one tree, which I hope never to be, I should be tempted to choose this variety; Ohio Beauty; Reine Hortense, very large, beautiful in color, and appears to be extremely fruitful upon young trees; White Bigarreau, a very old, but not-to-be-despised variety. Upon young trees, I find it very fine, and of good size.

Of the many sorts which are no more than "good," I will enumerate but a few. Archduke, the poorest bearer that I know, this season did better than usual; Belle Magnifique, too acid to be eaten in a raw state; although very late and handsome, I find it so badly punctured by the curculio that few specimens escape; Bigarreau Gros Cœur is apparently much like Elton; Early Purple Guigne never ripens, the birds taking every fruit as soon as colored; Monstreuse de Mezel, large and handsome, but rather coarse. I have an unnamed sort, strongly resembling it, but, I think, distinct; Napoleon Bigarreau, too firm for me, and deficient in flavor (Bigarreau d'Esperen is doubtless identical); Royal Duke promises well, judging from a few specimens; Waterloo I doubt being genuine. If it is I do not admire it, as it has a strong resemblance to the old Black Heart.

I have been egregiously humbugged, like some others, with several varieties which are not yet in the rejected list. Buttner's Yellow (which I believe is, however, rejected under another name) is one. After waiting some years for fruit of a very fine late cherry, I found it small, dry, tough and

flavorless. Sparhawk's Honey is at best indifferent. Sweet Montmorency, brought out with such a flourish of trumpets a few years since, is quite small, and of very little, if any, value. Tradescant's Black Heart, or Elkhorn, as it is generally called hereabouts, where it is much esteemed by some persons, has nothing to recommend it but the tremendous size to which it can be grown. It is coarse, dry, flavorless, tough, and in my opinion quite unfit for food under any ordinary circumstances. In case of a failure of all other varieties, I might be persuaded to indulge sparingly in it. I do detest these great, coarse fruits; but when I ask people why they cultivate them, they answer, "they will sell."

I this season fruited, for the first time, several seedlings from the Bigarreau, planted in 1853. One or two were very late, but too small to be of any value. One bears a strong resemblance to the Black Eagle, in size, color and form, except in being perhaps a little more pointed. The few specimens produced were of fine quality, but unfortunately ripen during the height of the cherry season, when only something very remarkable is now of much account. If it improves, as seedlings so frequently do, it may be worth propagating. Prof. Kirtland has, however, such a very extensive and successful "manufactory" of new varieties, that it seems rather unnecessary for any one else to engage in the pursuit.

EXAMPLE IN A POPLAR TREE OF WHAT NATURE WILL EFFECT WHEN ASSISTED BY ART.

On the 10th of August, 1842, the lightning struck our Lombardy Poplar tree, not far from the house, with a crash as though the house itself had fallen in ruins. This tree, at 18 feet from the ground, branches out into three principal leaders. The one which faces the west received the full force of the thunderstorm, and it exhibited an excavation of 26 feet in length, and at one part of 22 inches in breadth. Independent of this sad stroke at the western side of the tree, its bole to the north was struck at the same time, and denuded of its bark to the extent of 6 feet by 14 inches. Some idea may be formed of the vast injury which this tree received when the reader learns that I picked up fragments of its wood full 50 yards from the spot where it stands.

After a close inspection of the lacerated parts I conjectured that there was still enough of solid wood remaining to resist the violence of the wintry wind. Having cut out all the shattered parts, I placed a series of thick slates on a solid bed of mortar, quite up to where the tree takes its three leaders: thus forming a hard and permanent covering of 18 feet in extent. At the edges of the slates we applied Roman cement nicely sloped off; so that the future wood and bark might have an easy passage over them, at each returning season for increase of growth. Thus, all being rendered safe from wind and rain we ceased our work, and left the tree to Nature's healing care. She has not disappointed us. Yesterday I got up into the tree and I inspected minutely the injured parts throughout their whole extent. Their condition was prosperous in every point of view. The new wood and bark have rolled over the slates to a close or joining within 11 inches, binding the slates down in an everlasting prison.

A Spanish proverb says : "Thou art welcome, evil, if thou comest alone." But, in this instance, our poor Poplar could not have such a consolation ; for another thunder-storm broke over it, and the lightning struck it on the northern side, riving off the bark for a space of 33 feet in length, and at places of 15 inches in width. Singular to tell, no apparent injury was inflicted on the wood itself. The bark alone had suffered, so that a new supply of slates and mortar was not required. This victim to the lightning's fearful rage is now in health and vigor, whilst its summer foliage is of as rich a hue as that of its surrounding neighbors. Should future tempests spare it the tree will be quite right again in a few years more ; and its bole will be as beautiful as I remember it in times long gone by. The day may come when this Lombardy Poplar's history shall be forgotten. Then, should it be felled to serve domestic purposes, woe to the carpenter's axe and saw ! They will have hard work when they shall have penetrated into the interior of the tree.

From this brief account, the admirer of trees may learn that it may be in his power to do wonders with them in their hour of accident, provided that he goes the right way to work, and lets Dame Nature have her own wise course. A lofty and majestic tree is a jewel of inestimable beauty on a villa's lawn, and is worthy of the owner's utmost care.—*Charles Waterton, Walton Hall.*

GRAPES.

BY GEORGE HUSMANN, HERMAN, MO.

BEING a constant reader of your valuable *Horticulturist*, and seeing the notices about new grapes from all parts of the country, it struck me that perhaps neither you nor your readers would object to a few words about comparatively old varieties as they have proved, out here West. I mean Norton's Virginia, Herbemont and Concord, which are my special favorites so far. What may turn up in future, among about seventy of the best varieties I have on trial, I am anxious for time to show. But those three have been thoroughly tried, and I can vouch for every word I say about them.

Of the first I send you a small sample of wine, made by Mr. M. Pöschel here, and a description written for, and cut from the pages of the *Valley Farmer*. Please excuse the smallness of the sample ; I could only obtain two bottles, which I had to divide into about thirty samples. It is the pure juice of the grape, without any addition whatever.

The Herbemont has been tried here now for ten or twelve years, and has proved uniformly productive, little subject to mildew and rot, is a magnificent bunch, and, in my opinion, hard to beat as a table-grape, although the berries are somewhat small. It is a luxuriant grower, and keeps its leaves until late in the Fall. Its berries are justly described as being "bags of wine." It is, however, somewhat tender, and should be pruned in the Fall, and covered with earth. It will withstand any common winter, but such winters as 1855 and '56 are too much for it. It makes an excellent wine, superior to Catawba, and will at least produce 500 gallons per acre

annually. The Concord has only fruited with us twice, but in very unfavorable seasons. It feels itself evidently at home here, in our soil and climate, not suffering in the least from rot and mildew, and bearing fruit abundantly. It is here much better in quality than either Catawba or Isabella, and fully proves Samuel Miller's assertion, that "those at the East do not know what a really good Concord is," so much does it improve the further it is brought South. I am confident that at least \$100 would be realized here per acre, by planting the Concord for the St. Louis market.

The Catawba will give a medium crop, about 200 to 250 gallons per acre, this season. It will soon be supplanted by better varieties, and in ten years from now, I hope to see but very little of it left. It is evidently not suited to the climate, and though it will always pay the diligent cultivator for his labor, yet there are many varieties superior to it here.

Peaches are scarce here this season, pears also, owing to the late Spring frosts, but apples are, as usual, abundant. We have several new grapes, peaches and apples here, of great promise, of which I hope to send you samples as soon as ripe.

But now, I am afraid, I have exhausted the patience of you and your readers, and you will doubtless be glad if I stop this rambling talk.

THE BEST EARLY APPLE.

BY E. E. CLARKE, NEW HAVEN, CONN.

THE specimens of apples herewith sent, are a variety of early fruit that I do not find described in the books. It has been somewhat disseminated about this State within the last few years, from the town of Bristol, it being the leading early apple cultivated in that locality, and I find on inquiry and in an interesting conversation with Mr. Ezra Norton of that town, an elderly gentleman of more than eighty years, that he procured scions of this apple from the northern part of New Jersey, the town of Paramus, fifty-five years ago. He shows on his place large trees that he has grafted at that time, which was probably the introduction of it into this State.

The name he received it under was "Sour Harvest," or "Zour Bough," of the Dutch or Hollanders, the people he received it from.

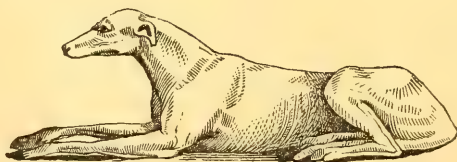
It being a distinct variety from the Early Harvest or any of the early apples described in the books, it was named by the person following the business of grafting at Bristol, the "North American Best," by which name it is generally known in this State.

An early apple of so much value should be more generally and accurately known. It is of peculiar growth; in the nursery rows it is strong and stiff, very diverging in its leading and other branches, requires very thorough pruning to get it into an upright and perpendicular form. It probably commences bearing sooner and more regular than any other variety; it is large, fair, flattish conical, skin smooth, light or greenish yellow, red blush in the sun, slightly sub-acid, high flavor, very tender and juicy, fine for dessert or cooking; in short I should say it blended the qualities of the Early Harvest and Large Early Bough in equal proportions. It commences ripening the first of August, and continues through the month.

The apple described as the "Primate" in Downing's late edition, is the nearest description of this fruit, but the time of ripening there given is one month later than this.

[Our correspondent has given the character of a *very good* apple with great accuracy.—Ed.]

FORM OF VARIOUS TREES.—In ascertaining the habits of growth of various trees of the several popular varieties of apples that are largely cultivating in the neighborhood of Cincinnati, we have taken our own experience as a starting point, and then added to this such additional information as we have been able to obtain from other members of this Society. The result of our labors is the following classification:—*Of an Upright Conical Growth*—Benoni, Early Strawberry, Golden Russet, Early Sweet Bough, Lady Apple, Prior's Red, Northern Spy, Talman's Sweeting. *Upright Growth, but with a Round Head*—Red Astrachan, White Pippin, Alexander Kaighn's Spitzenberg, Michael Henry Pippin, Drop D'or Bohanan, Belmont, Rawle's Janette, Fall Wine, Rambo, Rome Beauty, Summer Rose, High Top Sweet, Myer's Nonpareil, Fall Pippin and Porter. *Spreading Limbs, and Round Head*—Smith's Cider, Maiden Blush, Baldwin, Roxbury Russet, Newton Pippin, Tulehocken, Winesap, Broadwell's Sweet, Gravenstein, Jersey Sweeting, Hubbardstown Nonsuch, Belmont Vandevere. *Drooping, Pendant Form: Head Symmetrical*—Yellow Bellefluer, Pennock, Rhode Island Greening, Newark Pippin, and Fall Pippin. *Pendant Drooping Form: Head Loose or Straggling and Open*—Ortley, White Winter, Pearmain, and Newton Spitzenberg. Of the above, we would particularly refer to Smith's Cider, Yellow Bellefluer, White Pippin, Rome Beauty, and Rawle's Janette, as trees of a marked vigorous growth and healthy, hearty habit. The Benoni, Winesap and Summer Rose are of only moderate growth, but appear perfectly hardy. The Early Sweet Bough, Newton Pippin, and Ortley, (or White Bellefluer,) appear to possess a less vigorous and somewhat unhealthy constitution.—*Selected by a Committee of the Cincinnati Agricultural Society.*



EDITOR'S TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY, Vol. XVIII.—The new volume, kindly sent us by B. P. Johnson, Secretary, is a new evidence of the value and importance of this Society; it is filled with valuable knowledge from the brains and pens of men who take delight not only in agriculture, but in imparting to others the lessons of experience. Rarely have we read a volume of more interest. The portions which attract our attention particularly are Dr. Fitch's continued essays on insects injurious to trees, the oaks and their borers being his last topics. Mr. Pell's prize essay on fishes, for which an award of a hundred dollars was made, is just one of those useful and popular essays which tell on the practical public. Our correspondent, Mr. Pardee, last month noticed Mr. Pell's fish-ponds, and to them and the information they teach we propose to devote all the attention our space will now admit of.

It has long been known that fish may be made profitable; oysters have paid large profits to their *planters*, and as population increases, fishes must likewise become a source of wealth, no less than of convenience and health. A man with a good trout pond so arranged that they cannot escape below a milk-house near his premises, has become a person of mark; parties leave New York and Philadelphia very frequently to make a repast on the contents of his superior preserve. But to Mr. Pell's essay, from which we make a few excerpts, wishing that we had space for it almost entire. Mr. Pell speaks as lovingly of his interesting pets as could old Izak Walton. He says: "I have eight ponds on my farm, all artificial, and fed by springs: they are with two exceptions fourteen feet deep, and contain forty-five varieties of fresh and salt water fish." He then proceeds to describe them in succession, beginning with the trout, of which—"The female is the best for the table. She may be known by her small head and deep body. Fish is always in season when their heads are so small as to be disproportioned to the size of their body. The trout is less oily and rich than the salmon; the female is much brighter and more beautiful than the male. This is a singular fact, and I believe the only creature, except woman, that is more beautiful than the male, in all creation. When first I stocked my trout-pond, I placed 1500 in it, and was accustomed to feed them with angle worms, rose bugs, crickets, grasshoppers, &c., which they attacked with great voracity, to the amusement of those looking on. Trout and salmon will bite more readily upon a hook baited with their own roe than upon any other bait. They grow much more rapidly in ponds than in their native streams, from the fact that they are better fed and not compelled to exercise. These are the only fish known to me that possess a voice, which is perceived by pressing them, when they emit a murmuring sound, and tremble all over. * * The largest ever known in England

weighed nearly twenty-three pounds. * * If it is the intention of the angler to send them to a distance, bleed them at the tail, and pack them in a basket with dry straw; when boiled, salt must be placed in the water."

Of carp he says: "There is no reason why they may not be made profitable. Fish are like hens in one respect; they never deposit all their spawn at one time, but at several periods, weeks often intervening, according to its maturity. * * Carp live longer out of their native water than any other known fish. In Holland they are kept alive twenty-two days, hung up in a cool cellar in a bag of wet moss, where they are perfectly fattened on bread and milk. * * As the North River now abounds with them, I will here mention how they may be induced to bite. Having been taught to eat bread, it is only necessary to convert it into paste and dip it in honey. With a hook so baited you may take them readily early in the morning or the dusk of the evening."

Of gold-fish, the Golden Chap, the following remark will be new to many: "I have noticed that by a proper diet I can increase the intensity of their color, change their external characteristics, improve the rotundity of their form, and add much to their size; and what is more surprising than all, those characters become hereditary in their offspring."

The sun-fish; he asserts that "their muscles are quite firm and free from oil, which renders them valuable for food, and particularly calculated for sick persons." The following compliment to fishermen is probably deserved: "Those who are fond of fishing, I have noticed, are generally placid, thoughtful, and particularly given to contemplate nature." * * "In China, almost every establishment has its fish-pond, in which are placed as many store-fish as it can hold; they are fed three times each day, with as much rice and blood as they will eat clean. By this management they advance rapidly in growth, and become exceedingly fat, and if intended for market are carried alive in large tubs of water. The water is then drawn from the ponds for irrigating purposes, and the mud saved for top-dressing. They are then filled and stocked as before. Last year I drew off the water from a sun-fish pond, and removed therefrom 7000 loads of unsurpassed manure, intrinsically worth one dollar per load."

But the pike stories are the most exciting. He says: "I have a large pond devoted to this fish, in which they abound to so great an extent, that I might supply half a dozen families the year round from it. They are the most notoriously voracious fish in our fresh-water ponds, and will devour ducks, geese, rats, serpents, and frogs; they have an amazing number of teeth, which they use in a scientific manner; there are 700 on the tongue, as well as both jaws and roof of the mouth. These ferocious fish have become with me as docile as dogs. * * I have known a pike to swallow partially a fish too large for his throat, and to carry it thus in his mouth, until the portion swallowed was digested. * * Pike are particularly fond of frogs as food, but the frog always makes battle when the pike approaches, and will sometimes mount upon his head, where they become very troublesome customers, placing their foreclaws in the corner of his eye, and clinging with their hind legs. If this position is well taken, it is utterly impossible for the pike to disencumber himself until the frog is willing to depart, which he usually consents to do when the fish approaches near enough to the shore to permit him to leap upon it. Pike grow faster than other fish in my ponds, making eight inches the first year, ten the second, fourteen the third, and twenty the fourth. I am convinced that an acre of pond would yield more profit than a ten acre lot under ordinary cultivation. * * A large pike was once caught in the river Ouse, which weighed twenty-eight pounds. * * I would recommend those eating pike not to swallow the bones, as they are excessively sharp, particularly hard, and defy the gastric juice of the stomach to dissolve them."

The following hint to bass-fishers should be remembered. "The day before you intend to fish for bass, sink a glass bottle in the vicinity of their haunts, with small fish in it, covered with a piece of pierced parchment, or linen cloth; this will attract them in large numbers, and by dropping your line in its vicinity, baited with similar small fish, you may take many of them."

We could go on multiplying extracts, but must be content with the foregoing for the present, heartily commending the book, and this essay in particular.

LIEBIG'S LETTERS ON MODERN AGRICULTURE are to be published immediately by John Wiley, of New York. Dr. Blyth's translation is an excellent one, and the book deserves and will excite the attention of thinking men in all countries. Some of his positions will no doubt meet with objections. They are addressed not to agriculturists alone, but to all who take an interest in their country. From the efforts of the army of anxious laborers results in producing larger crops have been obtained, but Liebig fears that the over stimulation given to the ground may be attended with disastrous results to posterity. The mineral food of plants is shown to exist in the soil in two different states, in one being immediately available, while in the other it is not yet brought by decomposition into a condition for absorption by the roots. "In every case the produce of a field and the duration of its fertility bear a fixed relation to the sum of the available food in the soil. Hence, if by mechanical means applied to the soil, we render the absorption of this food by plants more rapid, we thereby increase the amount of produce in a given time, and thus more quickly exhaust the stock. At the end of this given time the field will, for agricultural purposes, be unproductive, if the mineral matters removed by the crops be not restored." We have already seen this result in America. The author directs attention to the fact that this fundamental principle has been lost sight of in some of the systems of modern high farming, where the assumption is made that the available mineral food in arable soils is inexhaustible. On this system the present occupiers of the land may rejoice in their abundant crops, but the inevitable result will be the exhaustion of the soil for future tillers.

"To question," he says, "the fact of the restoration of fertility to land by guano, bone-dust, or rape-dust, would be an act of great folly, for this fact is borne out by the experience of the practical man." He is quite satisfied with the belief that his system of cultivation has been shown to rest on a rational and systematic basis; "which in reality is not the case." He holds that the greatest importance is to be attached to unwearied efforts in directing attention to the facts on which scientific principles rest; for if we can but succeed in inducing them to reflect on the proof of these principles, practitioners may be considered as converts to the doctrines of science; without a knowledge of principles no science can exist. If the large crops are a consequence of a mode of management by which the ground must gradually lose the conditions of its fertility, by which it must be impoverished or exhausted, then such a system is *not rational*, though it enriches the individual who obtains these high returns. He thinks it no longer possible to bestow again upon the soil all those conditions of fertility which have been withdrawn by the existing mode of husbandry abroad, but, by a judicious system of management, he believes so much may be accomplished with the still existing means, as to put in the shade all that has hitherto been done. He then recalls to mind the most general conditions of the life of plants. To understand correctly the effect of the soil and its constituents on vegetation, we must keep steadily in view the fact, that the elements of food present in it always possess within themselves active powers, but they are not always in a condition to exert this power. A solution of guano, when used in quantity, removes the *whole* of the ammonia, potash, and phosphoric acid which they contain, while not a trace of these substances can be found in the water which naturally flows from the soil. Hence our applications of stimulants, unless guided by science, will soon, if continued ignorantly, leave posterity, it may be with plenty of gold, but no food to be purchased by it.

This book requires *study*; we recommend it to those who would penetrate beyond the surface of things.

PHLOXES.—The following list of phloxes was made from the very extensive variety at Ellwanger & Barry's Nurseries, as the best twelve yet known to American gardeners. This superb herbaceous plants are better worth a place as ornaments than almost any other; they are showy for a long time, and for variety are equal to verbenas, with the advantage of being hardy:

Alba perfecta, Elise Fontaine, Gloire de Puteaux, Henri de Santa Cruz, Madame de Arguilliere, Venus, Spencerii, Superba, Teutonia, Vicomte Albert de Beaumont, Argus, Delecta.

THE ROOT.—Vegetable physiologists are now turning their attention to the great cause of the evils that plants are heirs to, and which has been so long neglected. The microscope is revealing the actual condition of the root, and explaining its mode of growth. Dr. Lindley, in a late *Gardener's Chronicle*, says:

"It has long been known that in certain plants the end of the roots is covered by a kind of cap or hood, within which the process of growth is carried on. Of this the common Duckweed offers a familiar example, which any one may see with the aid of a pocket lens. Another, on a far larger scale, is to be found at the end of the stout aerial roots of the Screw Pine (*Paludus*), in which it looks like a great brown cup. It now appears that the structure in question is general, not exceptional. Mr. Henfrey finds that 'the growing point of a root is not at its absolute extremity, which is covered by a cap-shaped or hood-like portion of epidermis of its own, continuous likewise behind with the cambial structure. This cap-like sheath of the point of the root may be compared with the head of an arrow, forming a firm body, which can be pushed forward by the growing force behind, to penetrate through the resisting soil. This cap is subject to destruction and decomposition by external agencies, and is less distinctly seen in roots growing in earth than those of aquatic plants. In all cases it is constantly undergoing renewal by cell-development at the back-part; and when it remains undissolved, as in many water-plants, it becomes very large; when it undergoes decomposition in proportion as it is renewed behind, it presents an irregular, ragged appearance, which probably gave rise to the idea of a spongy structure at the ends of the rootlets.'"

The ends of roots undergo a process of exfoliation, the rapidity of which depends on the idiosyncrasy of the species, and the temperature and moisture to which they are exposed. This exfoliation is connected with the formation of new tissue in the viscous matter, beneath skins or hoods of epidermis, which are eventually thrown off, and the doctor proceeds thus to point out the practical value of this apparently small fact:

"That rootlets form a skin at their points beneath which the process of growth is carried on may be an anatomical fact, but what is its application? Of what consequence can it be to a gardener to know what a microscope and a microscope only can reveal? We answer by asking whether the invisible processes of digestion in the human stomach need not be understood because they cannot be seen? or whether it is perfectly indifferent to a gardener to know where the equivalent of a stomach is to be found in the plants he grows because it is impossible for him to view either the processes of assimilation themselves or the minute places in which they go on? Surely it must be admitted that if we are to understand the mode of treating plants properly we cannot learn too much about their ways of life and growth.

"It is well known that the roots of plants increase in length solely by the continual addition of new matter to their points. Were it otherwise they would be bent and turned and distorted by the resistance of the soil itself, if indeed they could ever penetrate it at all. This will be easily seen by any one who endeavors to force a piece of twine through the loosest and softest earth that can be found. Hence the well understood fact that the youngest part of a rootlet is its tip, a part which is incessantly renewed during the period of growth; and which, acting like a sponge in absorbing whatever the earth can give up, had acquired at one time the name of spongiole, spongelet, or little sponge. But there always remained these questions: how does the soft young delicate nascent tissue of the rootlet manage to exist in contact with the earthy particles that it is perpetually displacing? and why does it never catch up such particles and entangle them in its substance? To this an answer is now returned; it is not, it is never, in absolute contact with the earth, but is screened from the earliest moment of its second life by an old skin, which it pushes forward, and gradually renews, forming its own matter of growth in security beneath it. Mr. Henfrey compares the skin to the head of an arrow, which can be pushed forward by the growing force behind. We would rather compare it to a screen or mantlet such as troops sometimes employ in their advance towards an enemy.

"We may safely assume that this cap, hood, coif, screen, or whatever else it is called, is necessary to the root, and that its removal must be injurious, inasmuch as the forward growth of the root will be prevented by its removal. That being so, of what immense importance it must be to secure, with the utmost care, this delicate organization on the safety of which so much depends. In the rude hands of ignorant persons, who transplant a bush by pulling it up, as if they were 'pulling a turnip,' all this important structure must necessarily be destroyed. It is no wonder then if so many plants perish under the hands of common laborers. Only see how

they 'prick out' cabbage plants or celery, or any of the seedling tap-rooted crops; it is no wonder if they find great gaps in their rows. Instead of wreaking their anger on 'the grub' they should blame their own ungentle ways.

"But it may be said that plants are dealt with well enough in the rude mode that is so common, and that the care required by theory is not really demanded by practice. Winter-moved shrubs, or those which bear to be lifted in August without much care, may be pointed to in support of this notion. But these instances do not really affect the question. In the dry weather of August such plants as the Rhododendron and its allies are not growing; their roots are ripened, hard, and tough to the points of the fibres; and they will bear much rough usage without damage; moreover, a large part of their most delicate fibres is so firmly imbedded in earth that they come up with a 'ball,' and are not at all disturbed. So in winter, when trees are removed, the rootlets are hard and torpid. Nor is it to be forgotten that some plants have a wonderful power of repairing injury, if they have once acquired their woody organization, and time is given them. When the roots of a winter-moved tree are broken the wounded ends may close up, and on the sides of the roots new rootlets with the requisite hood will gradually form before the period of vernal growth recurs. Others are constitutionally able to reproduce roots at all seasons, and under all circumstances, owing to what is called their strong vitality: as we see in the Willow, whose wands grow when stuck in the earth, although they neither have nor ever had a root.

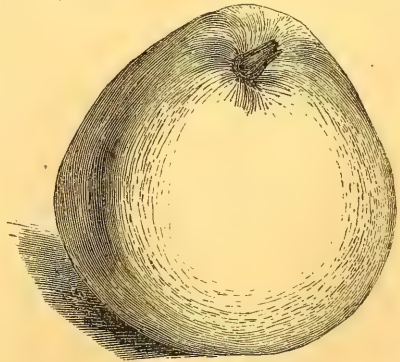
"It is not to cases such as these that rational gardeners will look. We once knew a man who ate Belladonna berries with impunity; that was his constitutional peculiarity; his stomach was able to resist that dangerous poison; but we cannot infer from such a case that Belladonna berries may be eaten. So with the roots of plants; we are not justified in saying that the utmost care is not required to preserve their young points from injury because some plants succeed perfectly well without care.

"But it is not merely on account of the extreme delicacy and importance of their points that roots require to be handled with the utmost gentleness. Another microscopical fact has been ascertained within the last few years, and is of hardly less interest. When you look with the naked eye at the skin of a young root-fibre, nothing is seen except an apparently level, uninterrupted surface. But in many cases there are present infinite multitudes of little hairs, through which food is imbibed; they are the mouths of the root. Through their agency the sucking or feeding power of the rootskin is very considerably augmented; to remove them is to diminish or destroy that power. But they are so delicate that any ungentle treatment of the root must destroy them. In the words of Prof. Henfrey, 'they are mostly invisible to the naked eye, and their presence is chiefly betrayed by the adhesion of the soil to them. When young roots are carefully washed and placed under a magnifying glass, their fibrils (root-hairs) are seen very clearly; and on such roots as those of barley, for instance, they exist in enormous numbers.'

"We recommend all unsuccessful cultivators to turn these important facts over in their minds, and to consider well whether they have always thought about them. They have a very large application."

ERHARD'S RAVENSWOOD PEAR.—We present a cut of this early and excellent fruit produced on the place of Charles F. Erhard, Ravenswood, Long Island, N. Y., who has it now for sale. The cut represents the fruit rather below the average; though small it is lively and excellent; as will be seen by the following report of the "Proceedings of the American Pomological Society," for 1858, page 196, it has been favorably noticed in a paper there read by Mr. T. W. Field. Mr. Erhard now attaches his name to the fruit and calls it "Erhard's Ravenswood," to which name he is fully entitled.

"The Ravenswood, obtuse pyramidal, tending to obovate, small to medium in size, with a very short thick stem, has qualities that entitle it to much regard. Ripening from the middle of July to the middle of August; it is superior to most pears of that period, in rich aromatic flavor, and in its great abundance of vinous carbonated juice. It is a very great bearer, and almost



all the fruits are equally good. It is a seedling found in the woods of Astoria and planted on the grounds of Charles T. Erhard."

A *Real Blanket Sheet* is the great Poster of the New York Agricultural Society's Fair, to be held on 4th, 5th, and 6th of October. It represents, too, a large and excellent society—shall we say the most progressive? Large enough to be a cradle cover for four twins, we have found some difficulty in placing it "in a conspicuous place," but at last, with a long ladder, and some long nails, it greets every passenger of a not insignificant Railroad. Good luck for the scheme, and fine weather, is our benison. Of the *National Agricultural Society*, at Chicago, and the *Fair at Elizabethtown, New Jersey*, we have most flattering accounts of success in all respects.

The *New Hampshire State Agricultural Society* will hold its tenth Annual Fair at Dover, on the 5th, 6th, and 7th of this month.

WE are quite sure that the following, which we take from that excellent periodical the *Southern Cultivator*, is from the pen of the author of "What's in a Name," which has had so many admirers; in short, it can only be from T., of Torchhill, Georgia, who is termed the Tom Hood of Southern pomology, by the *Cultivator*.

Y E L I T T L E T R E E .

BY YE ORCHARD RAMBLER.

TAKE it up tenderly,
Plant it with care;

It's but a little tree,
Nothing to spare!

Scant are the limbs on't,
Fibres but few,
Take care, or it won't
Take care of you!

Mangle the bark of it,
Man with a soul!
Pestle the roots of it
Into a hole!

Oh, for the shame of it,
Better be dead,
Fruit to the name of it!
Nary a Red!

Take it up tenderly,
Man with a soul!
Oh! but a little tree
Likes a *big* hole!

Fair is the sight of it,
Lordly and bold!
Fruit on the limbs of it,
Crimson and gold!

Who'd be a market-man
Selling his fruit,
Gum in his eye, and
A worm at his root?
Down with the raw-bone,
Shrivelled and dry!
Juice for my jaw-bone!
Joy for my eye!

Basket on basketful,
Peach upon Peach!
Juno-like, beautiful!
Rosy and rich!
Choose for the good of you,
Orchardists, each!
Dollar a *load*, of you,
Dollar a PEACH.

THE HARTFORD PROLIFIC grape was fully ripened by Col. D. S. Dewey, at Hartford, Conn., on the 3d of September. It seems to be an increasing favorite. Will some one exhibit in our vicinity a bunch of Union Village, which we have not yet seen in perfection.

FRUIT IN THE SOUTH.—"We had," says a correspondent in southern Georgia, "a fine crop of grapes this year; also, pears; apples, a small one. Stone fruits were cut off by frost, and what escaped that the curculio took. One fine peach orchard was saved from frost by dense damp smoke; to effect this, wet sawdust and tan bark proved best. Speaking of curculio, all the best late plans, except the old safe ones of shaking, and of pigs and chickens, are useless. Relying on smell will not do.

THE FRUIT IN ROCHESTER.—A hurried letter appears in our "correspondence" which might have been greatly extended, and would properly have described other useful establishments, but time was wanting for examination, and we took the most extensive. With regard to the absence of fruit in so many other sections of our country, the old adage occurs to the memory, that "the vestry eat the venison and treat the congregation to a chime of bells!" While our model nurserymen are enjoying the fruits of their labors, and have plenty of apples, pears, and plums, the majority of our parish are starving on potatoes—the nurserymen have the venison, and the congregation the chime of bells only. Let us all wake up—"follow the leader"—stir the ground, shake off the curculio and the slumber that pervades so many, and resolve to have the venison in spite of that incumbrance which wraps so many in the cloak of indifference, and why not say at once, *laziness*.

ANSWERS TO CORRESPONDENTS.

FRANK SNOW, Fredonia. The seeds of the "new lawn grass" have been started by one or two in this country, but must be procured, as yet, from London. See our last number.

E. B., West Bridgewater.—We are not aware whether the pawpaw will succeed in West Bridgewater or Boston. Possibly it may, but it is doubtful. There is no difficulty in making the seed germinate. All the names you mention are for the same plant. Anona is the name in Michaux. Of *Gishurst's compound*, so much talked of and approved by the gardeners abroad, for the destruction of insects, we have no practical information. Will some one import the article and enlighten us.

S. S.—We find the following answer to your inquiry all ready in the *Cottage Gardener* :

"LARGE HYDRANGEAS IN SMALL POTS.—The way they get those enormous large heads of Hydrangeas in 48-pots is this : They have strong old plants to get cuttings from ; and in September, or later, or earlier, when they can feel the top of a shoot is set for bloom another year, they instantly cut it off with three joints, put it in a 60-pot, plunge it in a warm bed, and root it quickly without forcing the flower-bud any farther. Early in the spring they shift into the next largest size pot, and humor the plant so as to enable it to make the bloom as large as it would be if the shoot had never been cut off. Your plants struck in the spring will make a bed next summer ; but ten thousand of them would not furnish one bloom such as you want.

SOME feeling is expressed by one or two of our correspondents, that an error has been committed in sending out a wrong grape and a very inferior one, for the *Emily*. Where the mistake began we shall probably be able to ferret out.

DEAR SIR :—You would confer a favor on me, and perhaps many others of your readers, by an article on the "Doucin stock." "Doucin stock" are advertised in all the nursery-pamphlets and at a high price. I have the last edition of Downing, and several other horticultural works, from none of which can I gain any information as to the nature or advantages of the Doucin stock. What are the nature, habits, and advantages of that stock ; and are they sufficiently well known and established to justify me in planting, this fall, an orchard of two hundred trees upon that stock ?

Respectfully,

A. B. C.

[The Doucin or Doucain stocks, as they are interchangeably called, are the layered branches of a variety of the "Pyrus Malus."]

As to the "nature, habits, and advantages of that stock," the tree is a distinct species of apple, is of medium size, bears small sweet fruit, and reproduces itself from seed : but for ordinary nursery purposes, as we have before said, the layered branches are used as making the best stocks. These stocks and the Paradise stocks have been used both in France, England, and this country, for dwarfing the apple-tree, and thus bringing numerous sorts within the sphere of a moderate sized garden. The Paradise is used more for producing a bushy-headed dwarf tree, and for bearing a fruit which is higher colored and earlier ; while the Doucin is for

raising a pyramid or dwarf standard by more careful training. Lindley says in his "Theory and Practice of Horticulture," p. 354: "In some soils, Doucin stock would not succeed for apples," and speaks of the apple on Doucin stock as requiring a loamy or moderately light, *but not chalky*, soil.

The apple scion engrafted upon the Doucin is changed in no other respect, either as regards habit of growth, flower, fruit, or quantity produced upon a branch of a given size, except that the tree will bear quicker, is most emphatically dwarfed, and its products are of course limited in number by this diminution in size; while by being trained into the pyramidal form, it can be made quite ornamental; and the garden, not being overshadowed by the branches of huge standards, can be allowed to produce other fruits; and vegetables and flowers can be cultivated to advantage.

If you are confined to an area of one-tenth of an acre, and wish to have 100 or 200 samples or varieties, and those as fine and fair as possible within that space, we can decidedly recommend the dwarf or pyramid trees. If you wish the orchard for ornament, there is no finer show than to see such miniature trees laden with the most perfect and handsome fruit; and again, dwarfs always bear sooner after planting than standards. But if you speak of an orchard merely for quantity of product and for profit, we must suggest that the standard trees, when come into bearing, will produce more fruit per acre, and in the majority of cases of equally fine quality with the dwarfed stock, while the care required in maintaining your orchard in fine condition will be far less than if you have the pruning and care of these pyramids.

Where land is valuable and labor expensive, it is often of consequence to the orchardist to have speedy returns for his money and trouble. In such cases the space between his 200 standard apple-trees, unless devoted to other purposes, can be filled with early and showy sorts upon the Doucin stock, which will commence bearing on the third year after planting; and when the standards come into full bearing these can be transplanted or destroyed. We would only recommend the space above stated to be devoted to quite early and quite showy fruit. These early sorts always become fairer to the eye, smoother, and have less imperfections upon the dwarf than upon the standard stock. The Red Astrachan, although not the earliest, is one of the most showy fruits that can thus be cultivated, and one of these dwarfs covered with this magnificently conspicuous variety, is as gay and gaudy in appearance as the handsomest of flowering shrubs; while in usefulness it is producing a valuable addition to our table luxuries.

A. B. C. says "Doucins stocks are at a high price." In the catalogues which we have noticed they are the same price as four-year-old standards.

CATALOGUES, &C., RECEIVED.—Seventh National Exhibition of the United States Agricultural Society, to be held in Chicago Sept. 12th to 17th, 1859; with the huge and wonderful poster, showing that something valuable is to be accomplished; this poster would make a comfortable blanket!

Wholesale Catalogue of the Du Page County Nurseries, Naperville, Ill., Lewis Ellsworth & Co., Proprietors.

Descriptive Catalogue of Dahlias, Verbenas, Fuchsias, etc., etc., for sale by Thorp, Smith & Hanchett, at the Syracuse Nurseries, New York.

Descriptive Catalogue of Fruits, for sale by Thorp, Smith & Hanchett, Syracuse, N. Y. These are very full catalogues, and discriminating in their character.

Feast's Fillmore Strawberry Circular; with an engraved portrait of the fruit and vine. S. Feast & Sons, Baltimore, Md.

Wholesale Catalogue of hardy ornamental trees, at the Great Valley Nurseries, New York, by S. T. Kelsey & Co.

Twenty-First Annual Report of the American Institute, 1859, at the Palace Garden, New York; will be opened October 28, 1859. Premiums offered, \$1,600.

Annual Catalogue of the Gloaming Nursery, 1859 and 1860. Jarvis, Van Buren & Co.,

Clarksville, Georgia. A collection of southern seedling fruits will here be found, beyond competition as to numbers and excellence.

Choice collection of New Roses. Thomas G. Ward, Washington, D. C., being the kinds raised by Prof. Charles G. Page.

Descriptive Catalogue of Grape-Vines, Strawberry Plants, and Small Fruit, for sale by Samuel Miller, Calmdale, Lebanon, Lebanon Co., Penn. Grapes are now the subject of great interest in horticulture, and much attention is being paid to all kinds. Mr. Miller has fruited one hundred varieties, and has given great attention to their qualities; has gone heart and hand with the business, and may be relied on for filling orders satisfactorily. We should not go wrong in recommending planters to get his catalogue and take his advice what sorts to grow.

Patent Office Report for 1858, a work of which we shall have something to say.

Letters on Modern Agriculture. By Baron Von Liebig. Edited by John Blyth, M. D. London, 1859.

A Manual of Scientific and Practical Agriculture, for the School and the Farm. By J. L. Campbell, A. M. Illustrated. Philadelphia, 1859.

Country Life: A hand-book of Agriculture, Horticulture, and Landscape Gardening. By R. Morris Copeland. Boston, 1859. A very handsome book which we have not found time thoroughly to read.

*Descriptive Catalogue of Fruit, Ornamental Trees, Shrubs, Roses, &c., at the Hermann Nurseries, Missouri; Husman & Manwaring, Proprietors. A very good catalogue of valuable stock, including a great variety of grapes.

Wholesale Catalogue of Parsons & Co., Flushing, near New York, for the autumn of 1859.

Choice collection of new Roses. Thos. G. Ward, Washington, D. C.

Trade List of Roses. James Pentland, Greenmount Nurseries, Baltimore, Md.

Descriptive Annual Catalogue of Bulbs and Flowering Roots, offered by J. M. Thorburn & Co., 15 John St., New York. A capital list. Henry A. Dreery, Philadelphia, ditto.

Fruit and Ornamental Trees, &c., for sale at the Leavenworth Nursery. Howsley and Burr.

Lyons Nursery, 1859. E. Ware Sylvester, Lyons, Wayne county, N. Y.

Transon, Forteau & Sons' Nurseries, Orleans, France. Trade list for 1859, '60. Plants as cheap as parsnips.

Wilson Agricultural Society's First Annual Exhibition, Oct. 12, 1859; but there is nothing but the printer's residence, Lockport, N. Y., to designate where Wilson is located.

Catalogue of Fruit and Ornamental Trees, for sale at the Hopewell Nurseries, near Fredericksburg, Va., Henry R. Roby, Proprietor. A very extensive assortment which we know there *ought to be* a demand for in some parts of Virginia.

Ellwanger & Barry's Descriptive Catalogue of Fruits, Rochester, N. Y. This should be read by every planter as well as the following:

Ellwanger & Barry's Descriptive Catalogue of Ornamental Trees and Shrubs, Roses, Flowering Plants, &c., &c., &c.

Ellwanger & Barry's Catalogue of Dahlias, Verbenas, Fuchsias, Geraniums, Chrysanthemums, Phloxes, and other select Greenhouse, Hothouse, and Bedding-out Plants. Rochester, N. Y.

Mount Hope Nurseries, Rochester, N. Y. Ellwanger & Barry's Wholesale Catalogue, or Trade List of Fruit and Ornamental Trees, Shrubs, Roses, &c., &c., 1859 and 1860.

Catalogue of Fruit and Ornamental Trees, cultivated and for sale by Peters, Harden & Co., Atlanta, Georgia. A good descriptive list of a good stock.

Descriptive List of Fruit and Ornamental Trees, &c., &c., cultivated and for sale by P. J. Berkmans & Co., Augusta, Geo. We congratulate our Georgia friends upon having such nurseries as the above. Messrs. Berkmans also issue a supplemental catalogue for 1859-60.

Descriptive Catalogue of Select Fruit Trees at the Nurseries of Thomas & Herendeen, Macedon, and Union Springs, N. Y.

Gossip.

THE TEA PLANT.—The agricultural department of the Patent Office will have one hundred thousand vigorous tea plants ready for gratuitous distribution within three or four months. It is expected that American grown tea will enter the market within five years.

PICEA NOBILIS.—This, which is still the most beautiful of all the California firs, has for many years past been much admired and sought after by lovers of Conifers. From the small number of seedlings raised when it was first introduced to this country by the lamented Douglas, good trees are scarce, and only in the hands of a few growers. Since its first introduction to Europe until very lately no good seeds have been imported, and notwithstanding the many plants which have been raised from cuttings or grafts, yet, from the barbarous custom of growing them in pots, good plants are still very expensive and difficult to be met with.

"THE Bois de Boulogne and the Bois Catalan were never," says a Paris correspondent, "in such request. Every night, betwixt seven and eight o'clock, carriages by hundreds may be seen rolling down the avenue de l'Imperatrice towards that fairy land, and there they remain till after midnight, recreating in the autumnal breeze as it sweeps pleasantly over the glassy surface of the broad lake. It is impossible to imagine a more perfect illustration of the "Happy Valley" of Rasselas than this exquisite combination of grassy lawn, of woodland, forest and magnificent sheets of water, with its rushing cascades, now presents. At night the boat-houses and the various gondolas are lit up with globe lamps of many colors, the reflection of which strikes into the depths of the lake and presents the aspect of ranges of fiery columns, as of a subaqueous palace, while the shadows of the tall trees interposing suggest the idea of a shrubbery and forest springing up from below. The lamps of the different vehicles as they flit by seem to dance backwards and forwards into the depths of the lake, till, following up the delusion, the visitor might portray to his mind's eye a temple of fire crowded with torch-bearing adorers, the vividness of whose flame bade defiance to the powers of water."

THE evil of deep sowing is not confined to the open garden. One cause why seedsmen get such bad names, when seeds would not grow, is owing to too deep covering, or placing them in soil so waterlogged, that, though they swell, the air cannot get at them, and decomposition is the result. Another cause why seeds saved by amateurs sometimes refuse to vegetate, is, that after cleaning they often are left in a place thinly spread out, and exposed to the full force of an autumn sun. The carbon, or starchy matter, becomes so fixed, or indurated, that it will not change into a sweet sugary substance for the nourishment of the embryo. Fine kinds of cucumber seeds are much injured by full exposure to sun for months, or weeks, on the open shelf of a hothouse. A few days would have done them no harm.

Miscellanea.

THE PIKE.—The pike is one of the largest of fresh-water fishes, and indeed, if the accounts which some writers give are not exaggerated, it occasionally attains a size not greatly inferior to the gigantic inhabitants of the ocean. Individuals are recorded as measuring from five to nine feet in length. They frequently weigh above 30 lbs. in the lakes of the north of England; Dr. Grierson mentions one taken in Loch Ken, in Galloway, which weighed 61 lbs. Pallas states that the lakes in the government of Tobolsk, in Siberia, nourish multitudes of pikes which attain the size of between 30 and 40 lbs. In North America, which seems to be the

head-quarters of the family, since not only the common European species, but several others exist in the great lakes of that country, 30 lbs. is considered a large size, though doubtless some individuals attain a greater weight. Most authors have cited the accounts of one said to have been caught at Kaiserlautern, near Mannheim, in 1497, which was nearly 19 feet in length, and weighed 350 lbs. The skeleton of this extraordinary specimen was for a long time preserved, and bore a brass ring with an inscription to the effect that the fish was put into a pond by the hands of the Emperor Frederick II., the 5th of October, 1262. From this it is inferred that it was upwards of 235 years old.—*From the Encyclopædia Britannica—New Edition.*

THE British Agricultural Society have just published a prize essay on the potato-disease, from which we quote a passage for the notice of those whom it may concern. The author, Dr. Lang, says "the disease is of a fungoid nature, increased in virulency by atmospheric causes. That all manures are injurious, saving only lime and salt. That the earliest potatoes in ripening should be exclusively grown. That earthing up repeatedly with fine earth is the only effectual preventive to the ravages of the disease."

Correspondence.

Rochester, New York.

DEAR HORTICULTURIST:—The lovers of your pages during years that are past and gone, may not object to reading a few hasty lines from this, your old residence, and now most certainly containing some of the best examples of horticultural progress. Consider me then shaking off the dust of Broadway on board the New World, that Great Eastern of the rivers, and dining next day in Albany, knocked about first on one side and then on the other elbow by ladies waiting on table in extra large crinolines; evidences that women are *asserting* their rights in these progressive quarters. Thence follow to the garden nurseries of the wealthy city of Rochester, and into the grounds of Ellwanger & Barry, the latter the able conductor of your historical pages for so considerable a portion of your lengthening history.

A fanciful writer says: "Of some plants the seeds, as far as we can perceive, are living animalcules, with *voluntary* motion, till they pitch their tent upon a spot that they think will suit them; they then germinate, and change from animals to algæ." Now surely the pear seeds would seem to have voluntary motion, and to have pitched upon Rochester for their home, but for the fact that apples and plums have done the same; and to suppose that all the fruits could have *assembled themselves*, is going a little too far. We must believe, therefore, when we see acres of trees, nearly *all* loaded with fruit, that there has been some human ingenuity invoked to call them together. Such is the case; superior culture in a suitable soil and a proper climate has arrayed the trees in a garb such as I never saw before. The pears assume here to my vision the same unaccountable increase of health, beauty, size, and productiveness, with fruit so large as not to be recognized or called by name, as surprised Mr. Barry at the exhibition at Burlington, Iowa, when he fairly admitted even he was at fault. Now in Rochester, the Dutchess and the Bartlett assume an aspect and a color—I may as well call it *the pear bloom*, which is to me from a little farther south,—the greatest of surprises; and this bloom, or a similar tinge, pervades other fruits. The grape and the green gage plum have it in a very marked manner. Then the sizes and the health! Why, no orange-tree in the tropics is more beautiful than the loaded pear-trees of Ellwanger & Barry, and others of Rochester. A soil of the quality that the pear would select for itself, and a climate to suit it also, have made the product all that has been said of it. And yet, without the greatest attention in other orchards

of the same vicinity, while the few pears that adorn the trees are larger than further south, there is also evidence that the utmost culture is required. The accounts we have had are realized in several, but not in all cases; the mode of treatment is precisely what has been often promulgated. To insure success there is no other crop, not even a spear of grass allowed to grow in the vicinity of either pear or plum-tree. Aeration of the root, mulching with stable manure in the fall, good trimming, and fine fruit is the result.

The *plums* are a perfect sight; the curculio is shaken off into sheets regularly every morning by a person appointed for the purpose; it requires but little time to do this, and the result is magnificent. The Green Gage, Pond's Seedling, Bowman's Magnum Bonum, Peter's Yellow Gage, Damascus Red, and the Prun plums, here hanging like ropes of onions, are examples of what care and attention will do.

Of the *pear*, the largest number budded is the Bartlett. The best bearers, where all seemed to be loaded, were probably the Duchesse D'Angouleme, Bartlett, Flemish Beauty, Vicar, Beurré Clairgeau, and Hardy, Belle Lucrative and Virgalieu; and we noted as very fine, Beurré de Waterloo, Goubault, Calabasse monstreuse, Cramoisie, in beauty number one, though in quality second; Pratt, Livingston, Virgalieu, the Downing, named by Leroy; Wharton, new; Buffam, St. Ghislin, Consellier Ramwez, very large; Beurré Nantais, Baron de Mello, Beurré Superfin, very good; Tyson, Beurré D'Amanlis, large and good; Sheldon; and the Church, known and esteemed for twenty years as one of the best.

The *apples* here are quite as successful as the pears; the trees are breaking down with the weight, and the dwarfs are especially beautiful. We noted as standards, Early Joe, Strawberry, and Jersey Sweeting, as highly ornamental; as fruitful, the Keswick Codling, Mother, Broadwell, Red Astrachan, Baldwin, Gravenstein, Genesee Chief, Rousselet de Stuttgart, and Reine de Reinette. The dwarf apple-trees were also borne down with fruit, and of extreme beauty, the best for ornamental purposes being, perhaps, the Doucain, but all were handsome and nearly all fruitful.

The *crab-apples*.—One of the most beautiful exhibitions at Ellwanger & Barry's, are the crab-apples on dwarf stocks. No lemon-tree could be more superb. The Large Yellow, of which we shall give a colored drawing, is of surpassing elegance; the Large Red, Yellow Siberian, and Golden Beauty, should be cultivated in every garden; and the little French Lady apple is ornamental and productive. But I must leave this grand exhibition of fruit, declaring it more encouraging than the finest collection ever brought together in a room. Here is the place to study and admire fruit-culture. The great scale on which everything is done, and the almost universal success in each department, is a means of education seen nowhere else in this or any country.

Acres of White Currant bushes scarcely supply the increasing demand for this popular fruit.

Peaches have failed this season in northern New York, and watermelons we remarked are very small, so that there is compensation in everything. The stock of young peach-trees is tempting for orchard-house builders.

Of *Grapes*, Ellwanger & Barry have a superior stock, and Bissell & Salter, Frost & Co., H. E. Hooker & Co., all, it seemed to us, might supply any reasonable demand in every branch of fruit-culture. Ellwanger & Barry have, say 4000 fine Delaware plants, and so forth; Bissell & Salter, two houses quite full, as well as the other varieties, including Logan, etc., etc., etc. Ellwanger & Barry have also the new varieties recommended for orchard-houses. The mode in which grape-vines are preserved in winter, reminds one of the summer operations of cloth merchants; after the wood is ripened they are piled away on shelves in cellars, and orders can be filled very easily and rapidly. We saw thus, a few thousand Rebecca vines; from this the reader may judge of their stock.

The *Roses*.—A whole prairie of the finest roses, say ten acres, greets the eye as you pass down Ellwanger & Barry's long walks; what will some of your readers say to a stock of three or

four hundred thousand, and the demand annually exceeding the supply! Their Moss roses, Salet, etc., are here in abundance.

Strawberries.—But we have passed the great strawberry department, and can only note the information given, that the proprietors of these nurseries consider the following the best twelve kinds: Wilson, Triomphe de Gand, Trollope's Victoria, McAvoy's Superior, Hooker, Longworth's Prolific, Genessee, Iowa or Washington, Brighton Pine, Triomphe de Gand, Hovey, and Burr's New Pine.

The ornamental stock of trees, shrubs, and herbaceous plants, is extensive and superior; Washingtonia, (Sequoia), of large size and ready for present effect. I noted as especially desirable, Cupressus Lawsoniana, Weeping Kilmameck Willow, of which much can be made, Abies Cephalonica,—a specimen here is fifteen feet in height;—Pinus pumila,—a specimen ten feet, and forty in circumference; Cunninghamia Sinensis—to be strawed up in winter,—Pinus Rubra, Laurus Californica, Photinia detata,—a new half hardy evergreen,—Juniperus Californica,—the leaves as fragrant as a rose geranium,—a fine lot of Cupressus funebris, Thuja Borealis, Acacia Bessoniana, with rich green foliage, the Cracovien Willow, the beautiful Rosemary-leaved Willow, the Oak-leaved Mountain Ash, the Weigelia amabilis, blooming in the fall, a great quantity; the Robinia inermis, Willow-leaved Ash, the extraordinarily beautiful Weeping Mountain Ash; an acre or two of tree Pæonies; whole hedges of African tamarisk, of Deutzia gracilis—superb for the garden borders, and Mahonias without limit; as a tree the Cut-leaved Birch, and others of that habit, are especially desirable. A specimen of this birch forty feet in height is extremely ornamental.

This visit to Ellwanger & Barry's premises has given me great pleasure. The extent of the operations carried on may be imagined when I say that six men are from year's end to year's end, employed solely in turning and mixing manure; that forty horses are employed in drawing it and in other operations; that to the regular supply of hands three or four hundred are added in the packing season; that their grounds embrace about a thousand acres, much of this in young pears, and that with all this cultivation there is no old stock, the planting seasons carrying it all off. When we reflect that all this is the result of patient industry superintended by knowledge and tact, and that these Napoleons of horticulture are esteemed wherever known, I have said enough to stimulate young men to industrious, steady habits; and I would say to all, *go and do likewise*. My paper is exhausted but not my facts, nor my admiration of these scenes of active usefulness most thoroughly rewarded.

The reflection constantly occurred during my visit, that it would be in vain to select or to describe a business at the same time so fascinating, so agreeable, so valuable to my country.

J. J. S.

MR. EDITOR :—I observe that at a horticultural meeting, at Rochester, a short time since, the use of swamp muck as a mulch for trees, &c., was suggested.

Last winter I caused muck, fresh from the swamp, to be drawn upon ground occupied by pear trees, and by raspberry and blackberry plants. In the spring, the muck having become quite friable, was spread over the surface, forming a mulch of perhaps one half inch in thickness, and proving a complete protection, during the drought which has prevailed here for a few weeks past; while the grounds adjoining seemed to have been entirely dry for several inches below the surface, the grounds thus treated presented such an appearance in no degree whatever.

I propose in the fall, to manure these trees and plants by digging in the mulch, which will then have become completely pulverized, and next winter to begin a renewal of the treatment which I have related; that is, draw on more fresh muck, spread it in the summer for a mulch, dig it under in the fall for manuring. Why would not this treatment be proper for strawberries and all garden vegetables where stimulating manures are not desirable? an occasional dressing of ashes would probably render the muck efficient as manure.

Three years ago I girdled, near its base, a bearing branch of an Isabella grape-vine. The fruit upon this cane ripened some week or ten days in advance of other fruit upon the same vine or upon adjoining vines, and the berries were very considerably larger. Last year I treated another cane upon the same vine in the same manner, and while the same result was not observable in regard to early maturity, the same increase in the size of the fruit was apparent. In neither instance did any observable injury result to the vine.

Yours, &c.,

F. S. ROOT.

Saratoga Springs, Aug. 24th, 1859.

"DEAR SIR:—Herewith I send you a cluster of the Taylor Grape, a wildling of the Cumberland Mountains. A little below Catawba in size of bunch and berry; free from all disease; a great bearer, and an enormous grower. Hardier than Catawba. This fruit was taken from the vine the 15th of August, on account of the wasps and bees eating them, and were not fully ripe; but you can judge of their quality." The above is a copy of a part of the letter, accompanying the grapes, from a friend in the northern part of Kentucky, who never sold a vine nor never will, but who has kindly distributed it in small parcels, and who kindly sent me the fruit. The vine I have growing, and is quite distinct from any of the one hundred varieties that I have.

Yours, truly,

SAMUEL MILLER.

Calmdale, Aug. 23d, 1859.

[This may be a very good White Grape, but it was received not quite ripe. There is to be an avalanche still of new fruit of this description, but we say

"Come one, come all,"

for out of the multitude we shall get varieties of the greatest value. We shall have more to say of the Taylor Grape.—ED. H.]

MR. MILLER also sends fine specimens of Delaware, Rebecca, Union Village which we shall figure, but it is not quite ripe for the taste; Delaware Burgundy, an excellent fruit of compact black berries, and will become a favorite; Franklin; the Perkins very foxy; Hartford Prolific, which hangs on to the bunch very well; Concord, Raabe, or Honey, small but very sweet; Mary Ann, about as good as Isabella; Lenoir, from a young vine, not fully ripe, and now pronounced identical with Devereux; Brincklé, of which we have little to commend, and Northern Muscadine, which is foxy and pulpy.

Union Village would pass by its appearance for Black Hamburgh, but the taste undeceives us at once.

HERE is another candidate for popularity, of which we only know personally that it was received in a state of entire decay:

MR. EDITOR:—I send you a bunch of grapes for inspection. The vine was found growing in an old waste garden, some twelve years since, and transplanted where it now stands, and has been bearing regularly ever since. It is thought to be an accidental seedling. It is earlier than Catawba and perfectly hardy, not being injured in the least by the severe winters of 1855-6, while Catawba and Isabella were killed to the ground within eight feet of it. It suckers less than either, and is not so liable to rot; is sweeter, with a thicker skin and less juice. For this climate (and I can suppose north of this) it is a better grape than the former.

I have heard it said that it was a better grape than the Rebecca, Diana, or any of the new natives. This grape has been propagated to a very limited extent. I am very anxious to have the opinion of competent judges of its merits, both for the table and wine, before propagating largely, which I intend to do the next season. Please give your opinion candidly, publicly, or privately, as you may choose. If the grape is worthy, I wish to introduce it to public notice, if not, we will content ourselves by keeping it among us; it is the best we have.

Yours, respectfully,

R. S. REEVES.

Keysburg, Logan co., Ky., Aug. 20th, 1859.

DEAR SIR :—We take the liberty of sending to you a bunch of the German White Muscat.

You see from the name that we do not pretend it to be a pure native.

We were anxious to test the fruiting qualities of the vine, and the flavor and quality of the fruit, and therefore started it in a cold house rather early, and have kept the plant in a tub all summer. This therefore does not prove anything, except as to color and flavor of the fruit. The size, of course, would be much improved upon a stronger plant growing in the open ground.

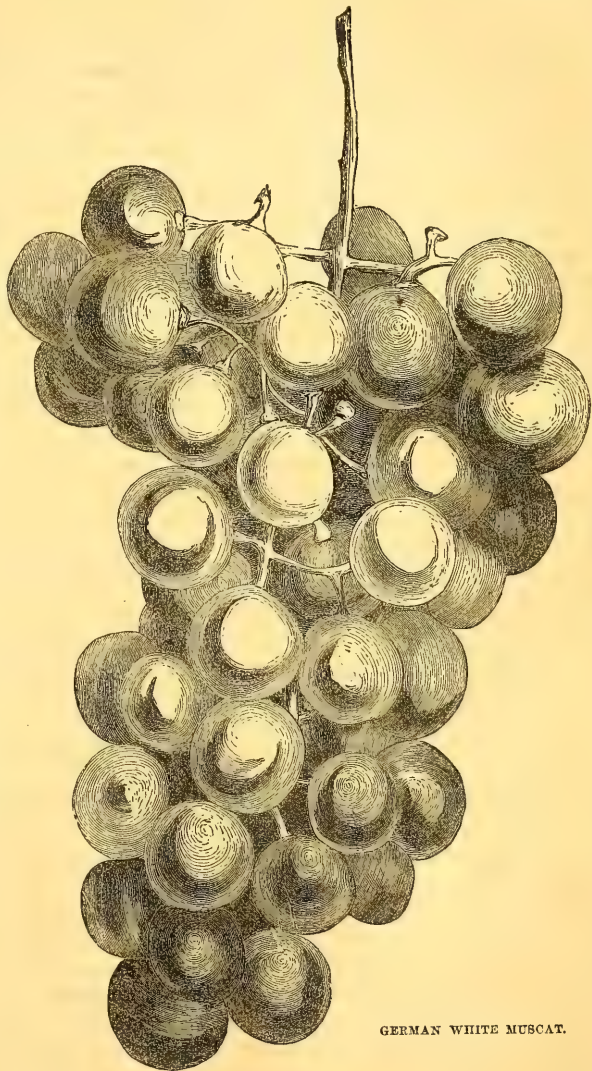
This is a grape which came to us highly recommended as being perfectly hardy, a great bearer, of fine flavor, and very early. It appears that it was brought to this country from the north of Germany, about ten or twelve years ago: has been growing and fruiting out-of-doors for several years, and proved very satisfactory. The mercury stood 12° below zero last winter and did not injure the vines. Very truly,

BISSELL & SALTER.

Rochester, N. Y., Aug. 17, 1859.

GRAPES — DEVEREUX, LENOIR, &C.—*Dear Sir :—*

In the *Horticulturist* of November, 1857, were given some descriptions of our native grapes, among which was one of the Devereux. This grape, as first known here, proved the same as the Lenoir. But some very remarkable bunches were sent here to our first fruit exhibition, from Montgomery, Alabama, under this name, totally distinct from ours, and it was taken for granted that at last the true Devereux was obtained; a description was drawn up from this fruit and from vines from the same locality. Since then, Mr. R. Peters, of Atlanta, has obtained cuttings from the original vine received as Devereux from the woods, and on fruiting it turns out to be identical with Lenoir, while the vines from Montgomery prove to be identical with



GERMAN WHITE MUSCAT.

the Ohio in leaf and fruit. It was bunches of the Ohio of extraordinary size, which were exhibited here.

Mr. Peters and myself are satisfied that there is no distinct Devereux grape.

The Lenoir has been obtained wild in three localities, by the gentleman whose name it bears, in Sumpter district, S. C., by Mr. Devereux in Hancock county of this State, and by the former in Forsyth county, from whom Mr. Thurmond obtained it, and has been grown under the names Lenoir, Devereux, and Thurmond. My seedlings of Lenoir in several instances now appear *fac similes* of the parent.

With the exception of the Delaware, this proves our earliest grape, and it is a very desirable one from its freedom from rot and the excellence of its fruit. There is no more hardy vine grown.

The Delaware has ripened here this season for the first time, and certainly is a step in advance of any other native. Whether it is earlier than Lenoir I am not quite sure, as the first blossoms of our vines were destroyed by frost, and the secondary buds broke very irregularly. I think it a trifle earlier than Lenoir, and decidedly sweeter. The Lenoir has a more brisk vinous flavor. I prefer both these grapes to Rebecca; no one who once possesses them will be willing to do without either.

A word about ringing the grape-vine. Of two Isabella vines growing upon the same trellis, after the blossoms were well expanded, of the one a ring of bark was removed from a branch containing three bunches. These bunches ripened in July, were of unusually large size as to their berries, and of remarkable sweetness, for the variety, and I am greatly pleased with the result of the experiment. The other vine I intended to take out this fall, as they are getting too crowded on the trellis. Accordingly, I took off a ring from the body of the vine at the same time the operation was performed on the branch of its neighbor. The operation had no beneficial effect whatever. The grapes are no earlier and no larger. Now, is this an ordinary or extraordinary result? Did stopping the downward flow of the entire sap of the vine at that point so weaken or check the growth of the vine at the root and stem below the ring, that the nourishment of the upper part was not really increased, and the beneficial results expected were thus entirely lost. For the future I am disposed to ring so few bunches on each vine that its general growth and vigor will not be affected. I expected the vine would be sacrificed, but did not expect the beneficial effect of the operation to be thus counteracted. Does the experience of any of your readers correspond with mine, or is this an exceptional case?

Yours truly,

WM. N. WHITE.

Athens, Georgia, Sept., 1859.

DEAR SIR:—We have taken the liberty to enclose in a small box to you a parcel of grapes. We hope that the Delaware and Logan grapes we send to you may keep up the reputation of the varieties.

These are part of a lot which Mr. Thompson, of Delaware, Ohio, sent to us for distribution: you see that the Logan is rather *passé*, but you see that it is compact, not loose: please tell us if they are as good as the Isabellas. Yours, in haste,

BISSELL & SALTER.

[The Logan in the state it was received was not equal to the Isabella. The Delaware, perfectly delicious.—ED. H.]

THE HARTFORD PROLIFIC GRAPE, a correspondent writes us, ripened Aug. 23d in Connecticut, and the 18th of the same month it has in one case attained maturity. Col. Dewey thinks it is rapidly winning public favor, and that its habit of dropping from the bunch is less conspicuous than at first. This opinion is confirmed by the *Homestead*.

DEAR SIR:—Don't laugh at me, but I will tell you a fact. On an Isabella grape-vine there is a bunch which is in close proximity to my lightning rod, and this bunch and this only of several hundreds turned of a deep black on the 20th of August, all the others being perfectly green. What does this teach us of the important uses which may be made of electricity? M. M. C.

ICULTURIST,

Practical Horticulture for Colleges.



LARGE number of communications have been received, approvatory of the several articles which have appeared in this journal on the subject of imbuing the youthful minds of this country with a love of Horticulture ; one lady assures us that she designs giving a lecture now and then to her scholars, accompanied by *samples to be eaten*. She could probably employ herself in no better work, for she will make lasting and useful impressions.

With a view of extending information on the subject, we translate the following from the *Revue Horticole*, to show the practical results that are attempted in France :

“ An innovation, of which the readers of the ‘*Revue*’ have decidedly felt the great importance, has just been introduced into the College of Fontenay-le-Comte ; it is an elementary course of gardening, meant to imbue young minds, early, with the tastes and knowledge which may powerfully contribute, sooner or later, to true and solid happiness.

“ Horticulture, which is popularized while extending her conquests, seems as though she wished to gain for herself the fields which agriculture loses—but is it not that she may eventually lead them to the more

useful and important labors of her sister, that floriculture draws around her so many followers ? This is understood at Fontenay, where the principal of the college and municipality has shown a knowledge of the wants of the times that cannot be too much commended ; but we, who know the sympathetic eloquence of M. Boncenne, evidently the right hand and moving spirit of all this work, are not surprised to see it prosper.

“ We ought, nevertheless, to congratulate masters of classical science for having no fear of clashing with the antique principles of Greek and Latin, when they rob them of some hours for the culture of flowers, fruits and even vegetables ; for having boldly and practically understood that, in France especially, education ought never to be entirely a stranger to the culture of the ground, because this culture is the inexhaustible treasure of our strength and riches.

“ The readers of the ‘*Revue*,’ who know the spirit and style of M. Boncenne, by his charming articles, and his ‘*Treatise on Gardening for All*,’ see with great interest this excellent beginning under the patronage of our eminent co-laborer ; it will be pleasant to them and others that the young

students of Fontenay will have an opportunity of listening to the weekly lectures he proposes to give ; for, at any age the mind attends willingly to the sweet lessons of philosophy such as M. Boncenne so well knows how to draw from the culture of fruits and flowers, and we are a little afraid that the students of Fontenay will greatly prefer *his* garden to the garden of Greek roots.

"The father of a family, anxious to urge his heir to lucrative employments, will say, 'It is both pretty and good, but while my son is engaged in studying these trifles, he does not make any advance in the knowledge of that which I wish him early to acquire.'

"Ah ! my dear sir, have you forgotten the state of barrenness in which you formerly found yourself on these subjects, when letters and science were all-absorbing ? Are lucre and ambition the only passions that render life happy ? If so, is it not melancholy ? Has not the soul some fastidious hours, when it needs to go out of the nauseous atmosphere of business to expand itself in the sun, as a sickly plant, to throw its perfume into the regions of poesy, as these wilted petals, which are wasting, regardless of their value, the treasures that heaven has allotted them ?

"Your hair has whitened under the weight of imagined important studies, that have occupied your brain and withered your heart ; would it not have been better to preserve a longer time your forces and health, in the moderation of these desires and the cultivation of flowers ? You have a garden that might be delightful to your sight and productive for your table, but you have never had the time or inclination to embellish it ; this is only because no one has ever given you a taste for it, by explaining the elements of gardening. You say, 'We are too far from Fontenay.' No, for we may learn to talk from the abundance of M. Boncenne's books, in which Horticulture is not an abstract science, but the most fascinating of the sciences, because it contains intelligence of a thinker who understands life, the heart of a moralist who knows the destinies of it, and finds in it precious teachings.

"We hear with much pleasure that able ministers have approved of this innovation at Fontenay ; this is a fresh proof that government understands the disease of our age, which now turns all minds to lucrative and brilliant professions, and neglects the country. Indeed, ambition has reared her head—professions are sought which will place the aspirant by the side of all that highest fortune and noble birth may attain, and in university programmes what is there to attract young minds to the love of the country ? Will the high-sounding discourses of Demosthenes and Cicero do it ? They induce dreams of popular glory and applause ! Will the poetry of Horace, Pindar, Vigil or Homer ? It simply lands the imagination in space.

"You again say, 'No.' It is doubtless from the 'Georgics' and 'Eclogues' that youth will gain a love for agriculture. What is more fascinating than the 'Tityre, tu patulæ ;' to pass time reclining under the shade of great forest trees, is an image impressed upon the minds and longings of all collegians ; and the sweet '*far niente*' of the swains of Italy, contrasts strongly with the fatiguing labors of real culture.

"We think, and all good minds will doubtless think with us, that lessons on the spot, practical lessons on gardening, without any other poetry than the beauty of the flowers themselves, with the prospect of realizing dainties every summer from our arbors and orchards, horticultural beauties from

our greenhouses, will be the surest tokens for good and right dispositions in the young men of our schools.

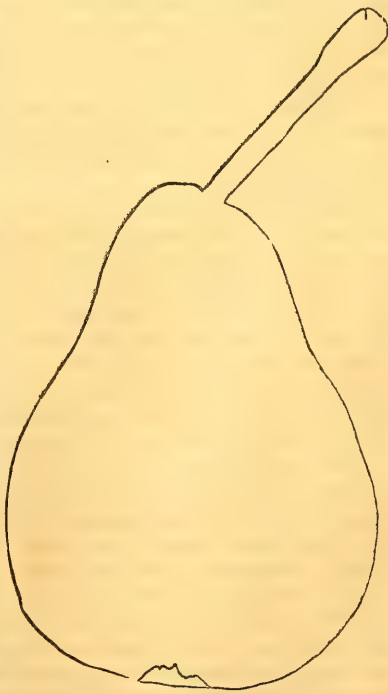
"We close our schoolboy days with university degrees ; this is all very well in a material view of life. What is left for us unless we have a professional career ? Oh ! let us furnish our memories and tastes with a coloring—ever so slight, of horticulture, that will afford sweet and healthful emotions for days of sadness and disgust of the world. Let our children occupy their leisure time, some hours even from their Greek, not in acquiring the abstract botanical nomenclature, but vegetable physiology ; let them have in their memories a place for the names and culture of the most graceful shrubs of our flower gardens."

THE GENERAL DUTILLEUL PEAR.

BY W. N. WHITE, ATHENS, GEORGIA.

THIS pear has now fruited with me three years. The scions were originally sent me by Mr. Charles Downing, and made the first summer after they were inserted a remarkable growth. The succeeding year they were full of blossoms, and of these some six or eight were allowed to perfect fruit. These were blossoms which were thrown out anew after the first had been cut off by frost. The original limbs of the tree in which it was inserted were partially removed, so that the growth of the grafted limbs was again quite strong. Last year the tree continued to blossom over six weeks, and bore a full crop of fruit, requiring severe thinning, and which ripened in succession from the 16th of August until November. It is the same this year, the tree again throwing out blossoms sparingly after the first bloom until nearly June, and now while fruit is ripening daily it has other fruit upon it that will probably not mature before the last of October. More than half the fruit has been removed in thinning, but too much was still left ; and in size it is inferior to last season. The fruit is very juicy and sweet, even if left to ripen on the tree, so that though rather small, it is quite desirable for its quality, besides being the surest bearer I know. I append an outline and description.

Fruit small, pyriform, slightly obtuse at the stem ; skin yellow, red in the sun, somewhat russeted and with numer-



THE GENERAL DUTILLEUL PEAR.

ous small russet dots ; stem an inch long, inserted obliquely by a lip in a slight depression ; calyx small, open, in a shallow basin ; flesh yellowish white, very juicy, melting, and quite sweet. Quality very good.

EXPERIMENTS WITH TRITOMA UVARIA, AND OTHER MATTERS.

MR. HORTICULTURIST : — I was a little premature in announcing the good news that *Tritoma Uvaria* can be *easily* grown from seed ; and wish now to amend the statement by restricting the phrase “easily” to the meaning of—*with about as much care as we bestow upon common garden vegetables* : for I have since discovered, that if it can be easily cultivated under judicious treatment, so also it can be easily destroyed, by a little “*coddling*”—a weakness or indiscretion into which most ardent floriculturists, whether young or old, are eminently liable to fall. If I mistake not, I once heard it asserted, that “bought wit is best, if it be not bought too dearly,” and as I have purchased the above item or small parcel of knowledge at the cost of two of my best plants, I hasten to advise amateur gardeners, and others of small experience, of the result of my experiments ; and thus enable them, if they please, at my expense, to avoid similar chagrin and disappointment.

It has been well said, that “particular instances are the foundation of all sound philosophy ;” and I shall venture to give a very minute and circumstantial detail of my management, and relate matters so trivial and common-place, as to expose me to the charge of superfluous prolixity, or perhaps even puerility : because I have learned that precisely from the attention given to such minutiae is derived the very essence of that skill in execution which gives to the *practised* hand such an advantage over the mere *theorist* ; no matter how exact and profound his acquaintance with the *general principles* of chemistry and vegetable physiology may be.

In the spring, when I turned out my *Tritomas*, I placed them in as varied situations as to soil and exposure as I could find in my grounds ; expecting thereby to learn something with regard to habit, and requirements for a luxuriant growth, and capacity for enduring privation. One, I had placed in the neighborhood of some *Salvias*, viz. : *Indica*, *Leucantha*, and *Romphyrantha*, a *Pentstemon Wrightii*, some *Alonsoas*, *Pelargoniums*, etc., which I knew would require occasional watering, but intended to give none to *it*. After having neglected to attend to them for a somewhat longer time than usual, I one morning found them all in a languishing condition ; and with the prospect of a hot day before me, I feared that some of them would succumb if I waited till evening, so I gave them a good drenching. Although *Tritoma* did not seem to be suffering so much as the rest, I thought it looked up rather beseechingly, as if it would rejoice to have a taste of the same refreshing fluid, and as it was in a growing state I concluded to indulge it for once. I was not altogether ignorant that sometimes a little water, like “a little learning, is a dangerous thing,” so I gave it gradually, allowing it time to soak in, a 12-quart watering-pot full—of rain water. It proved to be one of the hottest days of the season. Thermometer 92°. The next morning all appeared well enough ; in the heat of the day, they all wilted a little, but no more than what is usual. On the third morning,

however, instead of standing freshly erect like the rest, Tritoma was drooping, and a presentiment shot across my mind, that it was "a case." (We will call it Case No. 1.) I did not however abandon all hope. I stirred up the soil around it to let in the air, and I screened the body of the plant from the direct rays of the sun, but let them fall on the earth around not far from the base. It lingered along for several days, dying slowly, but surely—*damped off* at the ground; and its root never pushed again.

One might suppose that this would have proved a sufficient "*caution*;" and so it did, and will be, so far as the special case of watering in the morning goes, but still it did not prevent

Case No. 2. In a deeply trenched and carefully composted border, prepared expressly for the reception of some choice roses, which had been kindly sent me to "illustrate" the article by Mr. Saul, of Washington City, in the *Gardener's Monthly*, for March, "on the Manetti stock"—(and truly such beautiful tufts of fibrous roots I had never seen on a rose cutting before,)—I say, in this bed—but not within 3 feet of any rose-bush—I had planted a Tritoma. It seemed to like its position passing well, and was going ahead of all its fellows, so that I was confidently expecting to see from it my first bloom. When the rains came, about the first of September, and my roses began to start in the race for autumn flowering, I resolved "to push them to the top of their bent" by giving them an occasional dose of liquid manure: and one *evening after a shower*, I thought I would qualify their water from the sky with a dash of something more stimulating—not indeed old Cogniac, nor even old Peach, but of old and stale soap-suds. As I passed along, and the Tritoma met my eye, thinks I to myself: "If I give that also a small taste of this good stuff, who knows but it may coax it to show its colors several days the sooner for it," so I took "the responsibility" of pouring not above a quart around it at the distance of not less than two feet from the stem, and I do not suppose that it percolated through the soil more than half way to it. It was two or three days before anything appeared amiss, when unmistakable symptoms of disease were manifested: its *central* leaves (a most unfavorable prognostic) began to droop, and about a week afterwards, as I was attempting to support them by tying to a stake, to my surprise the main stem parted at the ground without my being conscious of pulling it at all, betraying a most ancient and fish like smell which would have put a rotten onion to the blush. Still there remained two strong suckers, quite fresh and green; so, after clearing away the decayed matter from the crown and filling dry white sand over it, I took heart of grace. But two rainy and cloudy days following, and having made no roots of their own, the young progeny soon lay in the same grave with their parent. The *tips only* or *spongioles*, of the long and somewhat fleshy fibrous roots were rotted away, the middle plant remaining as sound as ever.

Case No. 3 happily still remains to be reported. I have remaining but one plant which seems strong enough to expect a flower from this season, and as I cannot afford to leave it out to prove its hardiness in the open air, I have already removed it with a large ball into a 12-inch pot, and it seems now quite safely established, and at least shall be guarded from *some* mishaps.

One word about the name. The multiplication of synonyms has become a most revolting nuisance, both in Pomology and Botany. What right had Mensch to unsettle a name which had been satisfactory to Aiton, and Cur-

tis, and Redouté, and for aught I know to De Candolle?—Pray what is gained by the change? Tritoma, at least from its etymology, is significant of three cutting edges of its leaves; while to my ear Kniphophia is suggestive of nothing but “Knife and fork,”—unless it be Lager-bier, or Meerschaum. If one shall ask *me* for an offset or a seed by *that* appellation, I shall be strongly tempted to reply as Beau Brummel is said to have done to the vagrant who begged him for a penny: “Fellow, I *know* not the coin!”—M. A. W.—*Athens, Ga., Sept. 14, 1859.*

P. S.—As you requested it, I enclose another sprig of Mr. Nelson’s *Polygonum teretifolium*. I learn that it turns out to be *Polygonella ericoides*, of Gray: and I am glad of it; for I like the name better, and the plant differs so widely in habit from the *Polygonums* which are well known. It is decidedly shrubby; the stems would stand about 2 feet high, if supported upright; but they prefer to *straggle* about on the ground,—or in botanical phrase, are “procumbent,” while the branchlets are “assurgent.” The young wood is bright-green, and rather brittle, while the old is brown and wiry; not quite so much so as the heath, but more so than Southern wood, which at a distance it resembles.

As you see, it is still in flower, and has been so continuously since July, yielding a vast supply for bouquets. No doubt in the hands of a skilful gardener it can be grown in the greenhouse, and I think will well repay the trouble.—M. A. W.

BULBS.

THIS is the season for planting bulbs for the parlor, and greenhouse, whether in soil or water. From Mr. H. A. Dreer’s catalogue we cut the following plain and proper directions:—

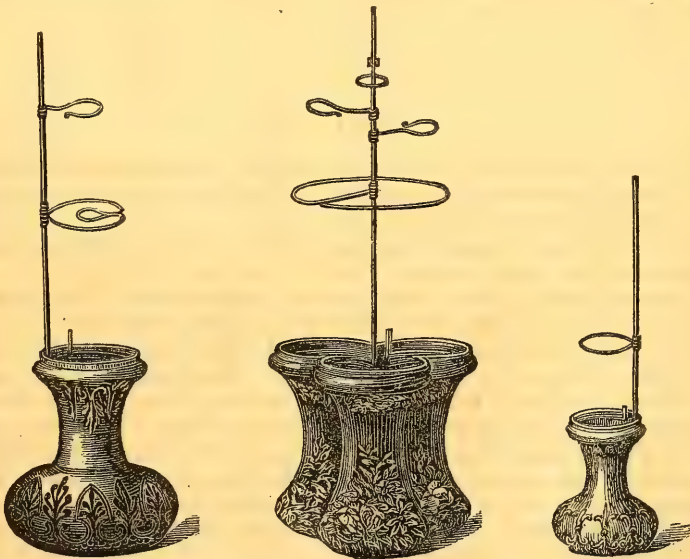
Method to bloom Hyacinths and other Bulbs, in the winter season, in Pots and Glasses.—For this purpose Single Hyacinths, and such as are designated earliest among the Double, are to be preferred. Single Hyacinths are generally held in less estimation than Double ones; their colors, however, are more vivid, and their bells, though smaller, are more numerous; some of the sorts are exquisitely beautiful; they are preferable for flowering in winter to most of the Double ones, as they bloom two or three weeks earlier and are very sweet scented. Roman Narcissus, Double Jonquils, Polyanthus Narcissus, Persian Cyclamens, Double Narcissus, and Crocus, also make a fine appearance in the parlor during winter. It is a remarkable circumstance of the Crocus, that it keeps its petals expanded during tolerably bright candle or lamp light, in the same way as it does during the light of the sun. If the candle be removed, the Crocuses close their petals as they do in the garden, when a cloud obscures the sun; and when the artificial light is restored, they open again, as they do on the return of the direct solar rays.

Hyacinths intended for glasses should be placed in them during October and November, the glasses being previously filled with pure water, so that the bottom of the bulb may just touch the water; then place them for the first three or four weeks in a dark closet, box, or cellar, to promote the shooting of the fibres, which should fill the glasses before exposing them to

the sun, after which expose them to the light and sun gradually. If kept too light and warm at first, and before there is sufficient fibre, they will rarely flower well. They will blow, without any sun; but the colors of the flowers will be inferior. The water should be changed as it becomes impure; draw the roots entirely out of the glasses, rinse off the fibres in clean water, and wash the inside of the glass well. Care should be taken that the water does not freeze, as it would not only burst the glass, but cause the fibres to decay. Whether the water is hard or soft is not a matter of much consequence—soft is preferable—but must be perfectly clear to show the fibres to advantage.

Bulbs intended for blooming in pots during the winter season, should be planted during the months of October and November, and be left exposed to the open air until they begin to freeze, and then be placed in the greenhouse, or a room where fire is usually made. They will need moderate occasional watering, until they begin to grow, when they should have an abundance of air in mild weather, and plenty of water from the saucers, whilst in a growing state; and should be exposed as much as possible to the sun, air, and light, to prevent the leaves from growing too long, or becoming yellow.

The annexed cuts were crowded out of our last year's November number, but are now appropriate.



Ty's Hyacinth Glasses.—It would be difficult to point out a more formal, inelegant form than that of the common Hyacinth glass. It compels the flower to be grown singly, and precludes by its shape all attempts at grouping the Hyacinths; and when we see them placed about on mantel-pieces and in windows, we have them ludicrously associated with the miniature Poplar trees in the Dutch toy-boxes of childhood.

Nor is this formality of form the only defect of those glasses. Though

made of colored glass, this admits rays of light to the roots. Now, these vegetate most healthily in darkness, and though clear glass is injurious, more or less, to their vegetating, yet some colored glass, admitting only one set of rays of the spectrum, is often still more markedly injurious.

Mr. Tye's Bulb-glasses obviate all these objections; and the brass supports adapted to them are the simplest and most effective we have ever employed.

The engraving renders a lengthy description needless. They are elegant in form, opaque, most tastefully ornamented, and are very cheap. The "*Tria-juncta-in-uno*" enables three to be grown in close contact; and two of these treble vases, placed back to back, so that six divers-colored Hyacinths can be arranged together, forms the most beautiful group of this flower we have ever looked upon.

Mr. Tye has smaller glasses of a similar form, and furnished with supports, for Crocuses, Tulips, Narcissi, &c.—*London Cottage Gardener*.

IOWA PRAIRIE SKETCHES—No. 1.

MORNING dawns upon "westward-bound" travellers, who, but a few hours before, were enjoying all the loveliness of a bright spring day, and gazing with delight on meadows of grass, wheat fields of liveliest green, peach-trees bursting into bloom, and forests just putting forth their silken leaves, and trembling under the weight of soft April showers.

They now throw up the sash to welcome the return of day, and be refreshed from a night of *un-rest*, amid *new* scenes, toward which, at a rapid rate, they have been almost unconsciously moving.

They have reached the shore of the venerable "father of waters" just in time to see the train of cars pass over the Rock Island bridge—the first to span this mighty river; and with true national pride they speak of the ingenuity and perseverance of our people, and the wonderful works of art they are everywhere achieving.

In a few moments more they have passed through the thriving and beautifully located town of Davenport, on the west bank of the Mississippi, rested their feet on the soil of the eastern borders of the "*far west*," and are borne out upon the broad prairie by the cars of the Mississippi and Missouri Railroad. The wish of years is accomplished, and they are permitted to gaze upon scenes so often glowingly described by others. But from that *first view* our travellers turn with a *feeling of disappointment*. However, they console themselves with the thought that they have arrived at a time which is probably the *most unfavorable* of the year for the credit of this region, and especially with those who have come from a section of country a *few weeks earlier* in vegetable life.

Naught now meets the eye but a broad expanse of sky above, and bare brown earth around. It is *SUBLIME* in its *vastness*, yet wearying to the eye, and makes one feel *so little* and *SO LONELY!* and, in the language of the poet, they are forced to exclaim,

"But oh! until this lonely hour,
What e'er my spirit's mood,
I ne'er have felt such saddening power,
Such boundless solitude."

Undulations of surface, it is true, break in some degree the monotony, but the swells of land all rise to about an equal height, so that a building upon one may be seen from another many miles away; and the sloughs, or small marshy water-courses which separate these swells or succession of low hills, although they help to vary the *near* view, are not discernable in the distance; and as the eye stretches *far away*, the landscape presented appears to be a nearly level plain.

Vegetation has not yet begun to revive from its dormant rest; and the prairie grass of the former year, brown and seared by the winter storms, covers all the scene, giving it, to the eye of the stranger, much the appearance of a succession of low sand-hills stretching in the distance into a vast barren plain.

Occasionally a river or creek is seen wending its serpentine course along the borders of the prairie, and skirted with timber, but this shows *not yet* the rejuvenating effects of spring. The trees, gnarled and knotted, and stunted in their growth, their bare arms waved to and fro by the fierce winds, look like giant spectres, supplicating the vernal goddess to return and give them back their covering.

Bird, beast, and man, all seem in haste to escape from the WIND, which ever

“In tempests o’er them raves,”

and to seek for themselves a shelter. But habitations for man are small, and “few and far between,” except in the most thriving towns. Even “*city sites*” are sometimes destitute of a single building. And now, although accustomed to the comforts and luxuries of the east, the weary travellers, after several days’ riding in a lumbering stage-hack, made to encounter deep mud and unbridged sloughs,* most gladly alight to rest and recruit at a *shanty* on the wide and sparsely settled prairie.

April 20th, 1859.

“MINNIE.”

EARLY FRUITING YOUNG VINES.—I have frequently done this from necessity, but never without greatly repenting it. The system with vineries is penny wise and pound foolish. It invariably cripples the vine for after years. I once saw strong vines planted, cut down to the sill, and form fine, well-ripened rods the first year. They seemed so strong and healthy, that the gardener thought himself justified in taking a good crop the next season.

The vines never did much good afterwards. Mr. Manning planted vines in a new house, three years ago, planting both at the front and at the back of the house,—the former to be trained up the usual way, the latter to be trained down. I noticed little difference between them, though, if anything, those coming down the glass might be the shortest jointed. On each of these vines, in the third year, were only a few bunches,—but then they *would be bunches*; and the rods, with fine foliage, were like walking-sticks, and with fine, round, prominent buds at the axils of the leaves. A lateral was left at each bud, stopped at the first joint. From the size of the foliage, little more would have found room. This wise parsimony, as to cropping at first, will tell in the vine’s favor ever afterwards. R. F.

* Pronounced by the people as if spelled—slews.

THE SUSIAN IRIS.

(Translated from the "Revue Horticole.")

THE genus *Iris*, of which the species are so numerous and so common in our gardens, contains nothing more curious than the subject of this brief notice—the Susian Iris (*Iris Susiana* of Linnæus). Every one knows that blue is the rarest color among the flowers of the parterre, and all that boast any of the beautiful shades of that beautiful color are particularly prized: but *black* is still more rare. The flowers commonly called black, such as certain Dahlias, Hollyhocks, &c., are only very dark shades of purple, violet, or some other color; but the flower of the Susian Iris is really black, with a faint tint of brownish violet, and fully justifies the name of Mourning Iris, that has been bestowed upon it.

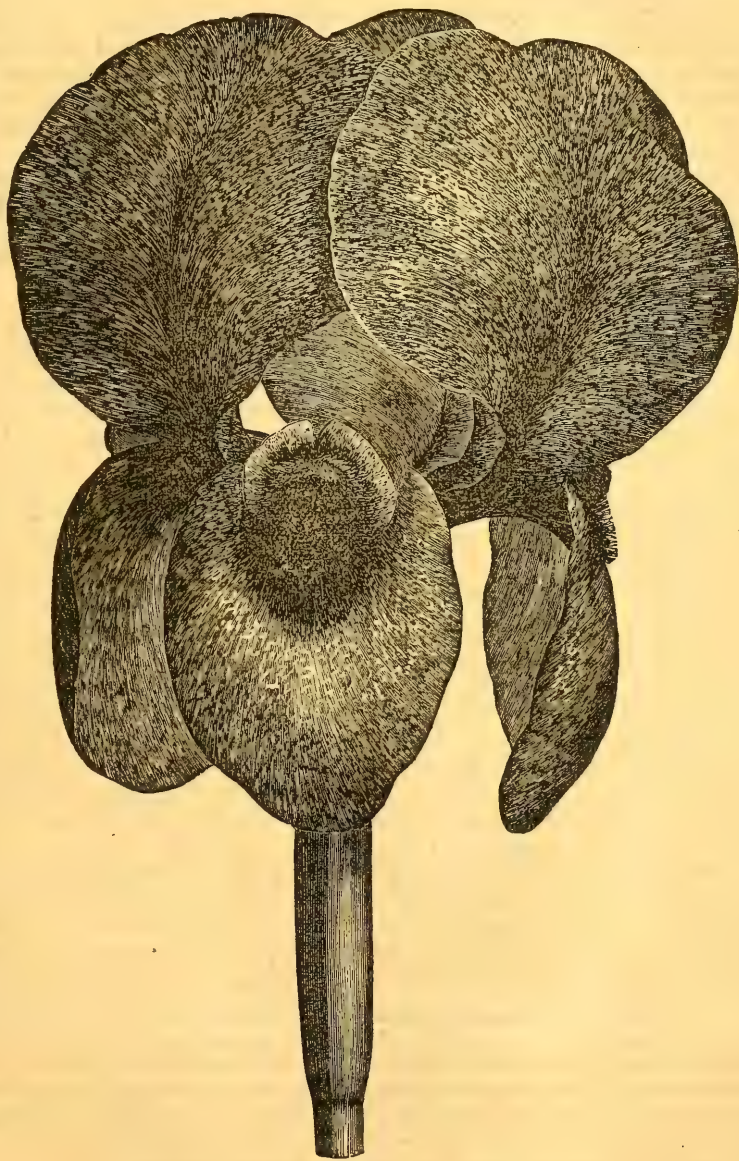
This uncommon color would alone make it worthy of the notice of amateurs and gardeners, but the interest is greatly increased by the elegance of its form and the extraordinary dimensions of the flower. The smallness of our pages will only admit a figure two-thirds of the natural size.

It claims not to be a new flower, but is, according to Linnæus, a native of the west of Persia, and was brought from Constantinople to Holland about the year 1596. It is now seldom found in our gardens, yet we must think it better worth the care of lovers of curious and beautiful flowers than many novelties that have only the equivocal merit of their rarity and recent introduction. Moreover, we believe that a careful search among the plants that were cultivated in the "olden times," and long since given up, would be rewarded by finding a large number that deserve to be rescued from oblivion.

The genus *Iris* is too well known to need a detailed description, and a glance at our figure will give a very good idea of its appearance: there is nothing uncommon about the leaves, and it is easily known by its solitary flower. Of the six great divisions of the perianth, the three outside are reflexed, and the three inside are bent inwards, having on a black ground a number of white stripes beautifully arranged. The three outside petals are very black at the base, and are bearded on the inside like the German Iris. The seed rarely ripens with us, and it is chiefly propagated by parting the roots. We have found it quite hardy, yet we think it safest to cover the roots carefully in winter to guard against severe frosts.

The specimen from which our drawing was made, bloomed in the garden of the Faculté de Médecine in May. The specific name *Susiana*, given by Linnæus, is not, as one might suppose, from the city of Susa, in Italy, but from the old Suza, a city celebrated in the history of ancient Persia.

MANURE FROM FISHES, &c.—I hasten the development of my house grapes very much during the sturgeon fishery in August, by burying large subjects in my borders, about eight feet from the stems of the vines, carrying out one of the laws of nature, by making the dead matter support the living plant, and it intelligent man, thus binding them altogether. My late friend, Mr. James F. M. Johnston, remarked to me, shortly before his death, "that the time would probably come when the art of man would acquire a dominion over that principle of life, by the agency of which plants now grow, and alone produce food for man and beast, by the manufacture of those neces-



THE SUSIAN IRIS,
TWO-THIRDS THE NATURAL SIZE.

saries and luxuries for which he is now wholly dependent on the vegetable kingdom, and be enabled to tread the soil beneath his feet as a useless thing, to disregard the genial shower, to despise the influence of the balmy dew, to be indifferent alike to rain and drought, to cloud and sunshine, to laugh at the thousand cares of the husbandman, and to compassionate the anxieties of the ancient tillers of the earth." This cannot be the will of God, as it would decrease man's means of happiness and pleasure, which he has invariably shown a desire to increase.

Set him free from the necessity of cultivating the ground, and you deprive him of the delightful pleasures of a tranquil agricultural existence, the enjoyments pertaining to returning seasons, health and happiness caused by labor in the sun's rays, and convert him into a manufacturer of the necessities of life.—*Pell's Report on Fishes.*

THE ANTIRRHINUM.

BY DANIEL BARKER, WEST MERIDEN, CONN.

THE antirrhinum is becoming extremely popular, a position it well merits, not only for its easy culture and propagation, but for its beautiful flowers, which are variegated in color, from pure white and yellow to deep crimson, with all the varied colors combined upon the same flower—the result of careful hybridization: for exhibition or grouping in masses in the flower-garden there are but few herbaceous plants which afford more pleasure to the lover of beautiful summer flowers. The season of flowering will depend upon the time of raising the plants from seed or cuttings—the latter may be taken from the last week in August to the end of September—placed in a sandy soil under a hand-glass, in a situation sheltered from the mid-day sun. When rooted, they should be potted in small pots in a mixture of sandy loam and leaf-mold or peat, pinching off their tops and placing them in a cool frame until sufficiently established to bear exposure to the open air. After which the sash may be left off night and day until the approach of hard frost; the cool frame will be the best place to protect them in during the winter months.

In the spring, as soon as the ground is in good working order, plant them out in the flower-borders, or group them in masses upon the lawn in soil well manured with *old* cow-dung. Here they will continue to throw up their beautiful spikes of flowers from June until November.

Seed.—The proper time to sow is from February to April (*not in the fall*), in pots or boxes, in light, sandy soil, and placed in gentle heat, about 60° Fahr. When sufficiently strong, prick out in boxes or seed-pans, about two inches apart, and place in a cool frame; inure them gradually to the open air, and plant out as recommended for plants from cuttings.

The following kinds are the most beautiful which have come under our notice;—we send by this day's mail a box of these flowers for your inspection:

1. *Beauty Supreme*—tube yellow, rose and white throat, fine.
2. *Lutea Striata*—white tube, yellow lip, beautifully striped with purple.
3. *Quadréalís*—white, yellow and purple, extra fine.
4. *Maid of Athens*—white tube, lip beautifully mottled with purple, white and carmine.

5. *Village Bride*—white, with yellow lip.
6. *Cherub*—white tube, yellow and lake lip.
7. *Macbeth*—Rich dark crimson, fine.
9. *Anaxo*—purple tube, orange and carmine lip.
10. *Purity*—fine, white.
11. *Marion*—scarlet, purple and crimson, with yellow lip.
12. *Papilio*—beautifully mottled with orange, red and purple.
13. *Alice*—white tube, striped with rose.
14. *Agnes*—white tube, lemon lip, beautifully striped with purple.
15. *Belle of the Season*—purple ground, mottled with white.
16. *Spit-Fire*—crimson scarlet, yellow lip, very large.
17. *Lucinda*—light ground, beautifully striped with purple, large and fine.
18. *Harlequin*—tube white, lip bright, rosy, purple, yellow and white.
19. *Norma*—rosy purple, rich lemon lip, fine and distinct.

[The box containing these remarkably beautiful flowers was received in excellent order, making a fine exhibition of themselves alone. Mr. Barker, we anticipate, will have a good demand for such creditable novelties.—Ed. H.]

SUNDRIES.

BY A BUFFALONIAN.

As I not unfrequently meet with articles in the *Horticulturist*, concerning which I have a word or two to say, I propose to myself a sort of "conglomerate" paper, upon several subjects noticed in the present volume. If I am mistaken in presuming that it may prove readable, I rely upon my kind friend the editor, to give me an intimation to that effect. I have first to notice an article

"On Mulching," (page 34,) in which Mr. Saunders replies to the remarks upon that subject, by several gentlemen, at the last meeting of the American Pomological Society. He so well expresses my own opinions, that I have only to remark the surprise that I felt, that the gentlemen in question should have taken such an extraordinary position, and decry mulching as injurious, in the face of both theory and practice, and to observe that even they admit its usefulness, while contending against it.

According to the report, Mr. Hovey was of opinion that it might be practical "without much injury" on "a high soil" readily parting with its moisture. Mr. Barry considered it "very judicious" when applied to newly planted trees. Mr. Berckmans was in the habit of throwing "small weeds" about his trees, "just enough to keep the ground shaded, not more;" (what "more" is needed?) and Mr. Walker, while inclining to the opinion that "the best pear-trees in the country" are in grass ground, (which I doubt,) confessed that his own trees received a mulch of green grass "some four or six inches thick," which I should denominate a pretty substantial mulch. These admissions, which are intermingled with the arguments of the gentlemen who chiefly opposed the practice, would seem to prove that they are not very firmly grounded in their disbelief of its efficacy.

In my own practice, I have mulched with tan-bark, manure, grass, and other materials, to a considerable extent, and am firmly persuaded, not only

that the lives of many trees have in this way been preserved, but that the health and vigor of all young trees are greatly promoted by means of it, unless in situations of more than ordinary moisture.

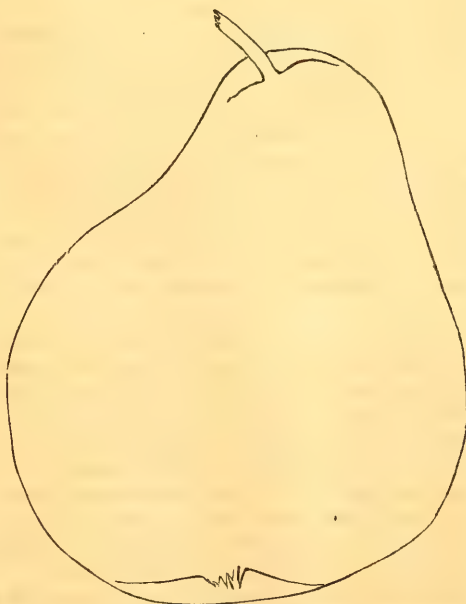
"Grape vines," &c., (47.) "The vine ranks among those plants which are very dependent upon external influences." "It is not, therefore, strange that the grapes which grow upon the sunny side of the Johannesburg, should be very superior to those produced upon the opposite side." I can state a case in point, much nearer home.

In the autumn of 1850, I made one of a party of gentlemen, having strong horticultural proclivities, who attended the meeting of the American Pomological Society, in Cincinnati, and passed a week very pleasantly in exploring the gardens and vineyards of that hospitable city. One of the first things to be done was, to go to market before breakfast and eat Catawba grapes, riper and better than we ever produced at home. Afterwards we found much finer ones in the vineyards of our newly made friends, and discovered that other things being equal, the degree of excellence was very nicely graduated to the exposure. This we tested by actual experiment in Mr. Longworth's vineyard, the "Garden of Eden." His tenant, the since famous Schneike, was supplying us with grapes and information at once, when one of our party, wishing to ascertain the maximum point of excellence, opened a negotiation, with a view to the possession of "the best bunch in the vineyard." The sagacious old vine-dresser led us from terrace to terrace around the mountain, and paused at the southernmost point in the full blaze of the sun, and high above the city. Here he cut "the best bunch," and a glorious one it was, exceeding in size of bunch and berry and height of flavor, any-

thing in the semblance of a Catawba that I ever saw, before or since. We had not before tasted the Catawba in its highest excellence, nor do I expect to do so again anywhere this side of Mount Adams.

"Curiosities of Vegetation," (117.) In proof that lilies are not the only "vegetables" which have a fondness for "sporting," I append an outline of a specimen of the Williams' Favorite apple, which might well pass for that of a pear.

The apple from which it was traced was one of three which I had this season, all differing somewhat in form, but of an unmistakable pear shape, and having the usual color of the variety. Indeed, so strong was the resemblance of one specimen, that a good pomologist upon being asked to name the *pear*, unhesitatingly pronounced it the *Forelle*.



WILLIAMS' FAVORITE APPLE.

I have had grapes, precisely resembling in form a small ribbed tomato, appearing as if formed by the union of several berries, in a semi-fluid state. The cause of such a sport I can readily refer to the presence of an abnormal number of pistils in the flower, but I acknowledge myself at a loss to determine what should change an apple into the shape of a pear.

"Want of method in Pomological Writings," (159.) I quite agree with Mr. Hanchett, in thinking that a little closer adherence to system would greatly improve some of the treatises on fruits, but dissent entirely from the ideas respecting flavor advanced by him.

He takes the ground that taste and flavor are two very different, and quite independent attributes, and considers the expression "a sweet or sour flavor" "a perversion of language."

I remember no definition which bears Mr. H. out in these opinions, or which countenances the idea that he conveys, that a fruit has no flavor of its own, and that it has *none* unless that of something else, as lemon, musk, almond, &c.

This seems to me preposterous. If a sweet or an acid is *not* a flavor, I am of the opinion that Mr. H. will be somewhat puzzled to enumerate many fruits which *have* one, for how very few are there in which any other flavor than that resulting from a mingling of sugar and acid can be detected. What constitutes a so-called "vinous flavor," but a mixture of these two properties? The early harvest apple, for example, has no other flavor that I can discover, but a mixture of sweet and sour, but does Mr. H. or any one else consider it *flavorless*? I do not see why a pear or an apple is not as well entitled to possess a flavor of its own, as an orange or a lemon. Would Mr. H. in describing the lemon, say that it had a "lemon flavor" or that its flavor was a mixture of acid with a small proportion of sugar?

I do not by any means object to the employment of these or similar terms in describing fruits, the flavor of which bears any resemblance to any other fruit, nut, &c., but I think that Mr. H. "puts too fine a point upon it," and that the distinction drawn by him, if scientifically correct, (which I am not prepared to admit,) is too *nice* to be practically available.

There is no such thing, of course, as a "*perfumed* flavor," and Mr. H. is quite right in considering such an expression "an intolerable perversion."

"The Pinneo and Hebron Pears," (169.) It is a matter of congratulation that the rapidly advancing state of Pomological science, will not permit an imposition to remain long undetected. Dr. Russell gives a very clear statement of the case in point, and I think expresses the general opinion pretty accurately.

The remark of Professor Henry, (187,) extracted from the patent office report—"We have no sympathy with the cant of the day, with reference to 'practical men,' &c. has my sincere acquiescence. I do not know of any term in horticultural literature which has been more abused. I know "practical gardeners" who are theoretical ones also, and who are intelligent, modest and gentlemanly men. To such the remarks of Prof. Henry or myself do not apply. I am speaking of those self-styled "practical men," who seem to claim an inherent right to know more than, and to sneer at, any person with whom they happen to differ in opinion, merely upon the ground that he is *not* "practical;" or, in other words, that he does not choose to disbelieve everything that his own eyes have not seen, or ignore the excellence of everything that his own hands have not planted.

The old prejudice against gentlemen farmers and book farming is not quite extinct, nor is it confined to farmers alone ; instances might be cited from your pages, Mr. Editor, of gardeners of sufficient standing and intelligence to be superior to such prejudices, who have endeavored to protect themselves by a "practical" shield, from the weapons of an adversary, who may combine practice with theory.

"The Orchard House" (251.) The thanks of the entire north are due to Mr. Rivers, for the system which he has introduced, and to you, Mr. Editor, for reprinting the work in which it is embodied. I have much faith in orchard houses, and hope that I may some day possess one of them. In the meantime I shall have the benefit of my friends' experience, for I hear of two or three soon to be erected here, as is the case with other portions of our State. We obtain peaches only by importation from more genial localities, the winds from the lake in early spring not only depriving us of the fruit, but even after a time affecting the health of the trees, and except in sheltered city gardens it is scarcely cultivated. We need the orchard house for its culture, and in my opinion no long period will elapse before it will have become one of our institutions.

But a few miles distant the peach grows and ripens finely, except where the mercury drops too far below zero, and in point of economy, imported fruit at \$1.50 per basket would doubtless be cheaper than that grown at home under glass. Still in seasons of scarcity, or before the market is supplied from abroad, the latter might, I think, be sold at a profit. Peaches have sold this season at from \$2.00 to \$3.50 per basket. They would scarcely cost that, I imagine, under glass, and aside from the certainty of a crop, which would be almost invariable, there is the not-to-be-estimated value that a perfectly ripe and freshly gathered peach possesses over one plucked in a half ripe state, and transported an indefinite number of miles by rail. Brought by steamer from Cleveland or Erie, as a large part of ours are, they are of course in better condition.

The protection of smooth-skinned fruits from the curculio, might be rendered nearly perfect in one of these structures, and to the many who have plum-trees but no *plums*, such an arrangement would be extremely satisfactory, and conduce much to a more amiable frame of mind, than some gentlemen are apt to experience during the plum season.

"Nomenclature of pears," (294.) I am looking with much interest for a solution of this question, and sympathize sincerely with the "young pomologist" by whom it is propounded, having experienced similar difficulties regarding names of fruits. Can none of the "authorities" give us the facts? Where are our much-esteemed Belgian friend, and the Boston pomologists?

"Bleeding of the Grape-vine," (294.) Allow me to ask, What amount of injury did any one ever *know* to have been caused by this bleeding, of which grape-growers stand in such dread?

"To increase the size of fruits," (295.) Some of Professor Dubreuil's suggestions seem to be of considerable value, where one has not too many specimens to operate upon, and I intend trying some of them another season. With regard to ringing the branches, I am a little sceptical, having practised it on several of my grape-vines this summer, and in only one instance, with any apparent advantage. One bunch of Black Hamburg showed a marked improvement in size of berry and time of ripening, but why the

other vines that were operated upon at the same time failed to do so, I do not understand.

"Early French Apricot," (332.) Perhaps I may afford some information regarding this fruit. Many years since the name was in the catalogue of one of our oldest nurseries, as a synonym of the Large Early; I do not remember to have seen the trees so named in fruit, but have some recollection of satisfying myself of the identity of the two, by a comparison of the wood and foliage.

"Native Grapes," (342.) A glorification of that miserable excuse for a grape, the Northern Muscadine.

What can induce any person who has ever compared this fruit with a decent grape to cultivate it, passes my understanding, unless he is so unfortunate as to be compelled to live in a place where no other is obtainable, in which case he is to be pitied.

Mr. Thomas some time since stated that it was not to be distinguished from the Brown Fox, and that he had frequently so told the originators of it, who, however, seem to place little reliance upon Mr. T.'s pomological acumen, as they continue to promulgate its praises as if it were the *sum-mum bonum* of all grapes.

I have grown and tasted—I will not say *eaten*—this grape, and was once a member of a committee under whose notice its wine came, and I can say—as a certain horticulturist of this State is reported to have said of the Cooper apple,—“I would not have it within forty miles of my farm,” (if I had one.)

I sincerely believe that this thing is a humbug and imposition, and that the Charter Oak, Sage's Mammoth, *et id omne genus*, are in the same category. There *may* be a place where these will ripen, and nothing else will; for that locality they may be of some value.

"Frosts and Fruits," (363.) Mr. Huidekoper presents a rather discouraging view of his fruit prospects. He is more unfortunate than we of western New York, who escaped with a partial scathing, some trees—indeed, many—being so heavily loaded that in my own case the removal of a part of the fruit became necessary to prevent their breaking with the weight. Other trees are however destitute of fruit, and in some orchards the crop was nearly or quite destroyed. I think that fruits are in general more highly colored this autumn than is usually the case, and of many varieties the specimens are remarkably fine.

"Ivy," (399.) I fully agree with you, Mr. Editor, in your admiration of this beautiful plant. We cannot grow it here, as you do, but are compelled to plant it in shady and sheltered situations, and be satisfied with a moderate annual growth. I amused myself last winter by growing it from cuttings, in water, and derived much pleasure from watching the development of the roots, which were freely emitted, and the growth of the leaves.

I have now a strong plant in a pot, grown in this way, and have several that have remained all summer in the water, which rarely requires renewal.

"Graperies and grape growing," (418.) Mr. Saunders' very correct idea, that an abundance of foliage is necessary to the proper ripening of grapes, if not very new, is quite ignored by many grape-growers, but is, in my opinion, one of the fundamental principles of the science. In my own vinery, the abundance of foliage has excited remark, as compared with the murderous system of close cutting practised by some cultivators.

I don't quite approve of Mr. Saunders' plan of renewing the whole plant annually, which appears to be rather too severe treatment, and must, I should think, eventually enfeeble the plant to an injurious extent.

ORIGINAL OBSERVATIONS ON INSECTS INJURIOUS TO OUR FRUITS.—THE CURCULIO.*

BY MARGARETTA H. MORRIS, GERMANTOWN, PA.

Dear Sir:—I have at length completed my series of observations on the insects and diseases of the Plum, Cherry and Peach-trees, a portion of which I now send for your most popular and valuable journal. Though most of the isolated facts may have come under the notice of observers, I believe no one has hitherto put them to so careful a test as I have been able to do in the last two years, trusting to nothing but ocular demonstration and tangible proof; the diseases of the trees and fruit have been carefully watched and noted down on their first appearance, and the insects all developed under bell glasses, so secured that nothing could get in or out after the branches of the trees or their fruit had been placed within them.

In the first place, I will begin with the insect called plum curculio, but whose real name is *Rhynchænus nemophar*, (No. 1,) belonging, like the curculio, to the weevil family. The individual figured in the accompanying frontispiece was developed from a grub feeding in a plum, and placed in a tumbler of earth on the first of June, in company with several other plums, all diseased; the grubs left the plums from one to four days after the fruit had fallen from the tree, and immediately entered the earth; one selected a spot on the side of the glass, enabling me to watch its progress and manner of forming its cell. It began by moistening the earth around it, until the cell was large enough to turn in comfortably; it then smooth-plastered the sides by emitting more fluid, and rubbing them with its rounded back: this was a work of two days. In these cells, apparently impervious to heat and moisture, the grubs lay during the period of their change, which in one was only four days, while the remainder appeared at various times until the 1st of August. The beetles thus early developed return to the trees, and complete the work of destruction by depositing their eggs in all the remaining fruit. The second brood fall to the ground with the injured fruit, at their appointed season, enter the ground, form their cells as their parents had done, but remain unchanged until the following season, when they emerge from their winter home at the period when the fruit has set, and in a condition to form food for their future progeny. The crescent-shaped blemish on the plum No. 11 was formed by the snout of the beetle cutting the skin, which it carefully raised, then turning round it deposited an egg, and replaced the skin with its snout, first pushing the egg into the flesh of the plum, and then replacing the skin over it, to exclude the moisture of the atmosphere. There is never more than one egg deposited in one plum, the insect going from plum to plum, until her whole store is exhausted. Should the beetles rise from the earth before the fruit is large enough to form a nidus for their young, they deposit their eggs in the tender branches of the

* See Frontispiece.

prune plum or morello cherry ; why these peculiar trees are selected by the weevil, is a question yet to be answered.

In this neighborhood, the swellings Nos. 6 and 7, on the cherry and plum branches, began to appear about the last of May and beginning of June, and attained their full size about the middle of June ; at this time the sap-vessels of the tumors were enlarged and distorted, and filled with sap, and the young grubs of the *Rhynchaenus nemuphar* began to appear. From this time the grubs grew rapidly, and fed voraciously. From one to six grubs were found in the tumors, according to their size. The section of a tumor, No. 8, was examined on the 10th of July, when the drawings were made ; No. 9 is one of the larvæ taken from the tumor ; No. 10 is a magnified drawing of the head of larva No. 9. At the same time grubs were taken from tumor No. 6, on the plum branch and plum No. 11, which proved, when examined under the microscope, to be identical with those found in the cherry tumor, deciding the question, and proving that the *Rhynchaenus nemuphar* is not only the cause of the fall of the fruit, but of the tumors in the branches. The figures Nos. 2, 3 and 4, are magnified sections of the mouth of the perfect insect, No. 1.

Dr. William Hammond, the eminent microscopist, of the U. S. Army, to whom I am indebted for all the magnified drawings, has proved that the fungus growth on the tumors of the cherry and plum-trees is not the cause of the swelling, as Harris and others have supposed, but a congenial locality where this species of fungus finds its proper food. It is the insect which causes the tumor. The remedy is simple, but indispensable. As soon as the swelling is perceived, it must be taken off and burnt, and the plums gathered and scalded, or eaten by swine. I will here let Dr. Hammond speak for himself :

“PHILADELPHIA, July 26th, 1859.

“MY DEAR MISS MORRIS : In accordance with your request, I have submitted the warts, or knots, found on the plum-tree, to microscopical examination, and, as you anticipated from your researches, have ascertained that they are not caused by a fungus. The tissue of these knots is identical in essential characters with that of the bark of the tree, except that there is not the same systematic arrangement of the elements as exists in the normal condition. Thus, on making a longitudinal section of a knot, the dotted vessels are observed both in vertical and transverse sections, and of course are much twisted and deranged. On the outside of the knots is a deposit of black matter, consisting of the *Sphaeria morbosa* of De Schwinitz, and, growing upon that, another fungus, belonging to the genus *puccinia*, probably the *P. lateripes*. This latter, however, is only found on certain portions of the surface, more especially in the furrows, though in a few specimens it prevailed over the whole exterior.

“There is not the least evidence of the presence of fungi in the interior of the knots. After careful examination, I am able to be positive on this point. The tissue of the knots is, as previously stated, the same as that of the bark of the tree ; and from the chambers found in this, and from the character of the matters found therein, there is no doubt as to the fact of their having been inhabited by insects. As I have found the *sphaeria* on parts of the tree where there were no knots, it can scarcely be possible that they owe their origin to the growth of the fungus.

“The accompanying drawings will explain more definitely the appearances

presented. Fig. 1 represents the internal portion of the knot ; Fig. 2, the dotted vessels found more exteriorly ; and Fig. 3, the external layer of *sphaeria*. In Fig. 4, the secondary fungus is seen.

"Hoping that you will continue your interesting and important observations, I am

Yours, sincerely,

" WILLIAM A. HAMMOND."



Fig. 1.

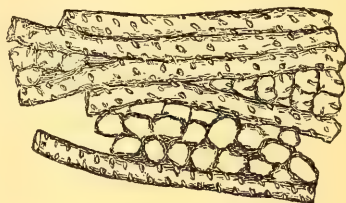


Fig. 2.



Fig. 3.



Fig. 4.

Several other insects form their nests in the tumors of the cherry and plum-trees after they are filled with sap, some of which are mentioned in Harris's treatise on insects :—these I propose to figure and describe in a future number.

Dear Sir:—In the previous notes, I promised a sequel to the history of the plum and cherry-tree knots, and the insects which feed in them, which I now have great satisfaction in furnishing, believing that the different species of insects observed by entomologists, and described at various times in the last thirty years, have all passed under my notice this year, and developed, from both cherry and plum tumors, under my bell-glass.

In Dr. Harris's Treatise on Insects, I find the statements of observers so conflicting, that I shall pass all by, and give only the history of my bell-glass and its inhabitants, with the dates as I find them in my note-book.

In the first week of April, I noticed the swellings on the branches of both plum and cherry-trees, but, on examination, could detect no signs of insect

life, or any of the fungus which some writers have thought the cause of the swelling, but which Dr. Hammond has so conclusively proved to be an after-growth on the tumor, not the cause of it. It is probable that the eggs of the curculio were there hatched, and the young grubs too small to be detected without a microscope.

On the 28th of June the swellings had grown to their full size, and filled with sap; in one tumor I found five larvæ of the curculio (*Rhynchaenus nenuphar*), three-tenths of an inch long.

I then placed a number of branches with their knots under a bell-glass, resting on a board covered with garden earth, and secured around the edges to prevent entrance or escape. On the 10th of July, many of the larvæ of the *Rhynchaenus* left the knots and entered the earth; on the 29th of July they had become pupæ, and on the 2d of August twelve perfect beetles rose from the earth, and returned to the branches on which they had fed while in the grub state. On raising the bell-glass, I found, 1st, That four larvæ of the codling-moth (*Carpocapsa pomonella*) had fed in the tumors, and were then in the winged form, and resting on the branches; this is a small brown moth of the Tortrix family, which may be seen in June and July, hovering over the young fruit, seeking a place where the eggs may be placed to the best advantage; the securest retreat is found in the middle of the blossom end, where the skin is thinnest; there is no puncture made, but one or two eggs are deposited on the outside of each apple. When the grubs are hatched, they immediately enter, and penetrate to the core; when the time of their change approaches they creep out of the fruit, and seek a retreat under the loose bark of the tree, where they remain during their change, unless found by the crab-like spider whose home they have invaded, or the prying beak of the wren or nut-hatch.

The head and thorax of the codling-moth is brown, mingled with grey; the four wings expand three-quarters of an inch, having the appearance of brown watered silk, crossed by numerous grey and brown lines; near the posterior angle is a dark brown oval spot, edged with bright copper color; the hind wings and abdomen are light yellowish brown, with the lustre of satin. 2d. The male *Ageria exitosa*, the common peach borer. 3d. Three flies whose wings expand half an inch; these are undescribed. 4th. Three distinct species of ichneumon, one of them the celebrated *Ceraphron destructor* of Say, the enemy of the Hessian fly (*Cecidomyia destructor*). And, 4th, a swarm of minute dipterous flies, the perfect insects of numerous maggots that had fed exclusively on the castings of the *Rhynchaenus*, *Ageria*, and codling-moth (*Carpocapsa pomonella*).

On a further examination of the trees, on the 23d of August, I found new swellings on the young branches, and, on opening some of them, I found the half-grown larvæ of the plum curculio (*R. nenuphar*), feeding, as their parents had done in June; and in the same tumor were two larvæ of the codling-moth.

On many of the newly-grown branches were unmistakable marks of the plum curculio, where it had wounded the bark before depositing its egg, and on one branch there were seven punctures in a row, with an interval of about a quarter of an inch between each puncture, thus leaving no doubt that they were the cause of the swelling, while the other insects had taken advantage of the banquet provided for them in the juicy tumor which the *Rhynchaenus* had caused.

NOTES ON PEARS, RIPENING, &c.*

BY W. R. COPPOCK, BUFFALO, NEW YORK.

WHITE DOYENNE:—This old and exquisite pear continues to fail with me. For the past four years, some forty fine and to all appearance healthy trees, both standard and dwarf, have hardly yielded a perfect specimen,—while for several years anterior, they not only fruited annually, but abundantly. They vary in age from 8 to 15 years, and are in varied soils, from stiff clay, vegetable loam, light loam, dry soils and moist, in all of which they make good growth. They blossom and set fruit freely, which, when half grown, cracks, and turns black with disgusting blotches of mildew. About one-half then ceases to enlarge, while the balance continues to increase to about the usual size. The best of them, in September, we pare, trim and stew in the usual way, and find them excellent in flavor; but none are otherwise edible. Various experiments have been tried with the soils to correct this malady, such as the application of lime, wood ashes, soda ash, iron filings, scoria, sulphur, burnt sod, &c., &c., with no other effect than to improve the growth and foliage of the tree. What more can be done for them? Double work them, perhaps, may be said; but there we should disagree, for I entertain "constitutional" objections to *double working dwarf pear-trees*. Mr. Ernst, of Cincinnati, somewhere states, (I quote from memory,) that many fine trees of this variety in his grounds suddenly became similarly affected, when, after a total neglect of their cultivation for ten years, they recovered their pristine excellence, and so continued. Now to this who would not exclaim, *mirabile dictu*! And thus I mean to leave mine, hoping for a like result.

Mem.—This pear still finds its way to our markets; fruit dealers inform me, that in many localities it remains untouched with this malady, and that their supplies are uniform, and the fruit fine.

Beurré Giffard:—This charming pear is a great favorite with me, and indeed with all to whom I have presented it. It is not as much known in our neighborhood as it deserves to be. Its fine size, beauty, fruitfulness and delicious flavor cause it to rank A No. 1, *best* of its season in my select list of choice pears. Like all fall pears, it requires to be early picked, and house-ripened—otherwise it is apt to rot at the core, or be mealy. The worst feature I have perceived with this pear is, that it may occasionally crack. I had several trees in bearing the past season, whose fruit, with one exception, was fine; that exception was a two-year-old dwarf; it had on it a dozen excellent specimens. After a severe rain during the night of the first of September, I found three fine pears badly cracked. Thus, you will see, it comes early into bearing, is free from grittiness, and although somewhat apparently weak and straggling in its growth, requiring watchful attention by *pinching*, &c., it is a very valuable acquisition. But let me hasten to mention another of my favorites the same season.

Kirtland Beurré:—This is a delicious pear, and had Prof. Kirtland bestowed no other boon upon a fruit-loving people, his name, for this alone, deserves immortality. Its excellent size, honeyed seckel flavor, beautiful appearance, perfect specimens, free from speck or crack, fair bearing,

* This article was written for insertion at an earlier date, but was crowded out; it is valuable, and now appropriate to the season.—ED.

vigorous growth, splendid foliage, good constitution and withal an elegant tree, give it high rank with me. I have fruited this variety for ten years, and never had a bad pear.

Mem.—A beautiful tree of this variety, 8 years old, was run over by a careless driver of a wagon, and broken flat down, the stem split for a foot or more, eight inches from the quince, and lay so all night, in March last. In the morning, after sorrowing over it as a lost friend, I raised it up, brought the parts together as well as possible, and bound them, covering all with grafting wax; put on splints, and lashed it firmly to stakes. In July I run a knife over the binding, and took off splints and stakes. It is now as sound as ever, having borne a crop, and passed through some severe storms.

Bloodgood and *Osborne's Summer* are both fine pears, but with me are shy bearers—while *Doyenne d'Ete*, *Dearborn's Seedling* and *Beurré Goubault* are fruitful to a fault. They require to be thinned out in order to get their best size and flavor.

Mem.—D'Ete, I think, has been too highly extolled; it is a fruit of but very medium flavor.

Belle Lucrative is a charming pear, in all senses of the term,—size, flavor, and productiveness. There seems to be a discrepancy of opinion among writers, whether this pear should be grown on the quince, or not. It certainly makes a fine and beautiful pyramid, and with me seems to keep pace with the best of them. Yet the only case of blight that has visited my grounds for three years past, was the blasting of a beautiful *Belle Lucrative*, the past summer. I know no reason, however, why this case should militate against the variety.

Columbia.—This pear, like the Bartlett, should never be worked on the quince, so imperfect is the union. A fine ten-year-old *Columbia* blew down the other day, showing a mere granulated protuberance, without any union of the stocks. The pear itself I find both poor and worthless.

In passing through the pear-grounds of a neighbor, some weeks since, my attention was called to the sickly and declining appearance of several large-sized dwarf trees, and an opinion desired as to the cause. In a moment I detected it and replied, "The trees were starved to death." "Starved? impossible! The soil is some of the richest and best on the farm." "Well, sir, we will prove it." Upon taking up the trees they were found to be completely riddled by the borer.

For some years past the *Saperda Bivattata* has been very destructive through our neighborhood.

The Apple, Quince, Mountain Ash, and the shrubs belonging to the genus *aronia* and *amelanchier*, have alike suffered, requiring the most active watchfulness. During the examination of a young apple orchard, of some two hundred trees, I found at least twenty per cent. more or less affected. The attack is not alone about the collar of the tree; I found several where the worm had entered at the base of the first tier of branches, and readily pierced them with a piece of copper wire. Here let me suggest to those gentlemen who have so signally failed with dwarf pear culture, that here *may lie a cause*, among others, for such failure. The insidious operations of this beetle are not readily observed without more than ordinary examination. The pear, they do not, so far as I know, touch, and an almost universal fault with amateur cultivators of the dwarf is, to leave more or less of the quince stock exposed to view. Hence it is readily got at by the

Saperda, while the frequent raking and stirring of the soil disperses any little discharge of wood powder there may be. The eggs of this beetle are not larger than the head of a pin, are laid the latter part of June to the middle of July, and in ten or twelve days are hatched, when, with the dwarf pear, they burrow downward, and by the fall are safely domiciled for the winter. Here they cut up the sap wood in zigzag lines, destroying the circulation of the sap, and frequently eating the entire substance of the tree. The full grown worm is, perhaps, an inch and a half long, white, with a very small black head. It has eleven segments, or rings, besides those of the head and tail. It continues in the tree for some three years, when it effects its transformation, and, gnawing through the bark, escapes into the air.

Vicar of Winkfield.—I have made a great discovery in ripening this pear, and desire to chronicle the event. For years I have grown in considerable quantities the Vicar, and never, until the present season, have I succeeded in ripening them so that they were more than barely edible, and such has been the experience of our neighborhood.

Nem. Con.—Last season, I took a different method, and from the first to the middle of December, they were in eating, and a truly delicious pear they are. It has given me especial pleasure to introduce them among our "coterie," who pronounce them excellent, more than *good*,—fine to *best*. My trees were excessively loaded; fruit very uniform in size, which was good. The picking was deferred as late as prudence would permit. They were then carefully taken from the trees, and spread upon a blanket in a cold north room, kept dark. Each layer was again similarly covered, until all were so disposed of. Then they went through the sweating process, and began to get a creamy, yellow tinge,—when such as were wanted for use were put into a pine closet kept near to the kitchen stove. Our *cook* keeps up an intolerable heat from early morn till night, and this *lucky* incidence has given a maturation to the Vicar before to me unknown. A week to ten or twelve days in this temperature fully ripens them. They color beautifully; many have a beautiful dash, or carmine cheek. They are no longer the coarse, gritty, astringent fruit, as ripened in a cool medium,—but melting, buttery, with a delightful aroma, and a much superior pear to the Glout Morceau in its best state.

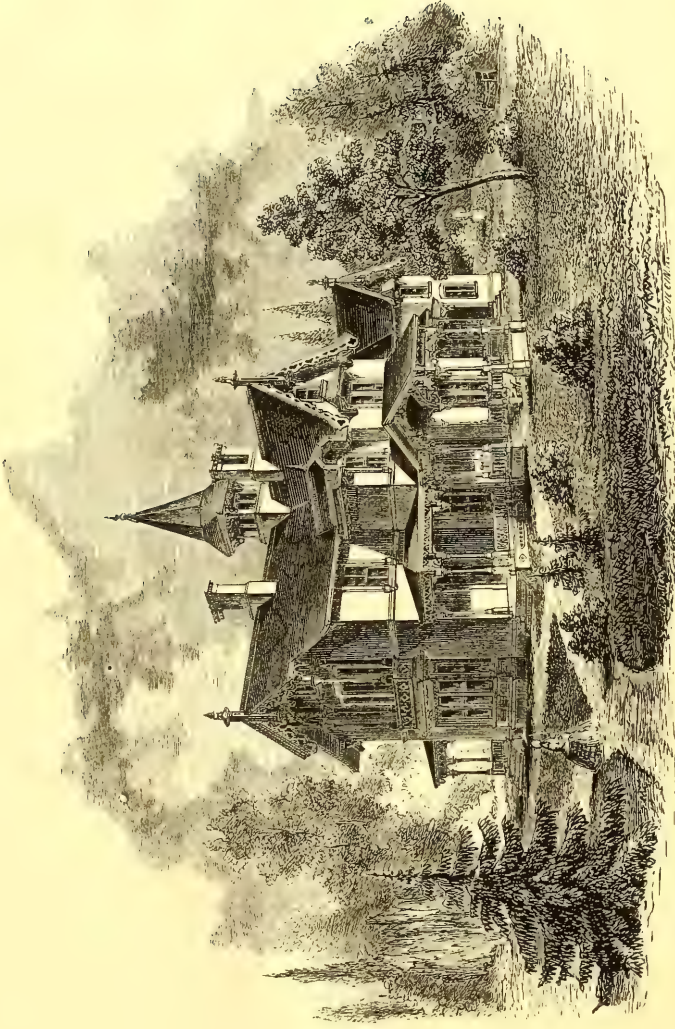
No pear has given me so much concern as this. Its fine, strong, elegant growth, and universal bearing, has given us a large stock of fruit annually, for which there was but little demand, and that for cooking only. Now, with my new management and the *cook's* aid, we shall have no further trouble with the Vicar of Winkfield.

Longsight Place.

HOW TO BUILD YOUR COUNTRY HOUSES.

BY CHARLES DUGGIN, ARCHITECT, 532 BROADWAY, N. Y.

RURAL Architecture is a branch of the profession that may be considered as having more latitude in fancy and design than any other,—requiring greater thought, taste and judgment to compose the parts of which it consists, and demanding a more correct eye for the picturesque, to design



RESIDENCE OF E. HOOKER, ESQ.,
ORANGE, N. J.

an edifice that will harmonize with its intended locality and with the surrounding scenery or local objects.

In a country residence we rarely find that which suits one location equally appropriate for another. Consequently it is often the case that the same design, much admired in one spot, is passed without inviting the least interest in another; showing very plainly that the surroundings in one instance add to, while in the other they detract from, its intrinsic beauty.

Many have the idea that a square house with a hall through the centre can be made more convenient than one of irregular shape; this is decidedly a wrong impression, as I shall endeavor to show. If confined to four straight lines, forming a parallelogram for the outward boundary of our house, of course we are necessitated to place the rooms in certain positions, whether that be desirable or not; but on the contrary, the outward boundary of the house not being confined, how much better a plan can be made by going on to the ground where we purpose building, and staking out the rooms so as to command all the different pleasing views the selected spot may afford, allowing some rooms to project beyond the others, thus obtaining a side view, and placing those rooms but little used in the least desirable portion of the house.

Another objection is often raised against irregular shaped houses compared with square ones, on the score of the cost. This is also an error. In a square house with a hall through the centre, I have almost always found there is considerable space lost in passages made necessary from the fixed position of the rooms, whereas, in an irregular house, this may be avoided by placing your different apartments so as to be entered from one small hall.

But perhaps the most important item of reduction, or rather set-off, between the cost of irregular and square houses, is the veranda. If we take a square house and require to have a veranda from all the rooms, it becomes necessary to continue it entirely around the house. On the contrary, in an irregular shaped house, if the plan be judiciously contrived, one veranda may be made to answer for several rooms.

It must not be understood from these remarks, that I maintain that an irregular house is in all cases *cheaper* than a square one, but I do say, that when properly arranged it can be built *as cheaply*, and be decidedly more convenient in its arrangement, and in every way more pleasing and picturesque in its appearance.

Accompanying these remarks I offer a design of a house that was built last year in New Jersey. It is situated in a beautiful and picturesque district, on the slope of the eastern range of hills, and midway between North and South Orange.

Its southern and western rooms look towards the western range of the Orange Mountains, which are studded with country villas and grounds, making this portion of the house the part where the best rooms should be situated.

This handsome villa is of greater pretensions in reference to style, and of higher cost, than either of the preceding designs I have illustrated.

Its carriage porch, its verandas and plant cabinet, its fine bay window and balconies, its handsome gables and ornamental cupolas, give to this house an expression of elegance, combined with all the comfort and convenience that a villa residence can well afford; and I am much deceived if this does not prove a favorite among the readers of this magazine.

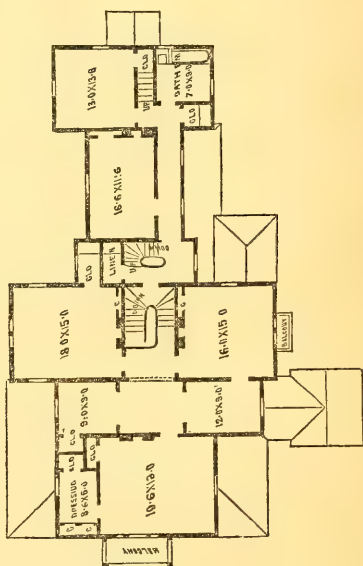
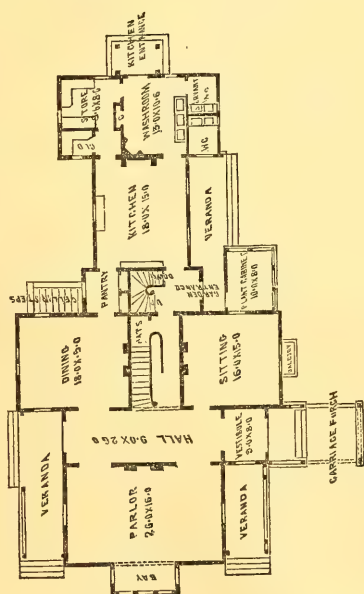
The Arrangement.—The principal entrance to the house is on the south side and under a wide and lofty carriage porch, from which double doors lead into a vestibule, paved with encaustic tile. The hall is $9\ 0 \times 26\ 0$, from which ready access is had to the parlor, sitting-room and dining-room.

The staircase is placed in a side hall which also answers the purpose of a passage way to the kitchen portion of the building ;—under the principal stairs is provided a closet for hats and coats.

The parlor is on the west side of the hall, and, with its embayed window, forms a noble apartment.

On the east side of the hall are located the sitting-room and dining-room—wide double doors are provided to these three rooms—and on reference to the plans it will be seen how the parlor, dining-room, sitting-room and hall may be used together, should occasion require it.

Connected with the sitting-room by means of a sliding-window is a plant-



cabinet, which is supplied with heated air in the cold season from the furnace in the basement. The other window in the sitting-room leads to a balcony.

The dining-room is provided with three windows, one of which opens upon the veranda. This room communicates with the kitchen through the butler's pantry, in which are provided closets, shelves and other conveniences.

The kitchen is a large, well-lighted room, and, having windows on two opposite sides, can be kept thoroughly cool and ventilated. In the kitchen are fitted up a sink and dresser. The fireplace is of large size, fitted with

the metropolitan range and boiler complete. Communicating with the kitchen is a wash-room, storeroom and kitchen-closet;—the wash-room is provided with fireplace and wash-trays as shown in the plans.

In connection with the wash-room is a water-closet for the use of the servants.

It is a pity that the plan of providing a water-closet in the main building is not more generally adopted instead of the unsightly outbuilding we so often see; for do what we will to conceal it, by either making it an ornamental structure, or endeavoring to hide it by means of planting shrubbery, we still have it there, and cannot deceive ourselves as to its use. As to the objection on the score of expense, it actually costs less to put this convenience in the house than in a separate building;—the slight additional plumbing really requiring a less amount than the extra outlay required to build an outbuilding, and afterwards surrounding it with lattice-work and shrubbery, or some other cunning device.

The back staircase is provided between the main portion of the building and the kitchen, and is carried up from the cellar to the third story. In this back staircase hall is provided the garden entrance, leading into a veranda, which communicates with a water-closet for the use of the family.

The arrangement of the chambers in the second story is very convenient, each room having a separate entrance from the hall. The small rooms over the hall may be fitted up with closets and converted into dressing-rooms if deemed desirable. The principal chamber is placed over the parlor, and is provided with ample closet room, and dressing-room attached. The window on the west side opens on a covered balcony, which is shown on the picture of the exterior.

The servants' chamber and bath-room are provided over the kitchen portion. The bath-room is fitted up with bath, wash-basin and water-closet, and is heated by a register connected with a hot-air chamber back of the kitchen-range. The tank is placed over the bath-room.

The third story is floored and left unfinished; there is, however, in the main portion of the house, ample room for three good chambers with closets and storeroom.

The cellar extends under the whole building, thus providing ample accommodations for the storeroom, milk-room, root-cellar, coal-cellar and furnace. That part of the cellar under the storeroom and wash-room is enclosed up solid in cement, and is made to answer the purpose of a cistern to receive the rain-water from the roof,—thus saving the expense of building one outside.

The height of the cellar is seven feet. The principal rooms on the first story are twelve feet; the kitchen portion eight feet six inches. The principal room on the second story ten feet, the servants' chambers eight feet.

Construction and Finish.—The walls of the cellar are built of stone. The walls above the cellar are constructed of wood and filled in with an inner coating of lathing and plastering. The outside of the frame is smooth, sheathed with one and a quarter inch tongued and grooved white pine plank, only two and a half inches wide, and joined in white lead. The roof is planked, and covered with best quality of slates, laid in mortar. All the work throughout is done with the best materials and in the best manner. All the rooms on the first and second stories are finished with cornices.

ORCHARD HOUSES.



HE accounts from abroad are as yet almost the only ones we can draw upon for information regarding the success attending the cultivation of dwarf fruit trees under glass. But one opinion of their value seems to be expressed ; as an evidence of this, the following, from a late *Gardener's Chronicle* of September, will be perused with interest.

THE ORCHARD HOUSE AT AUDLEY END.

In a recent visit to this charming seat nothing struck me so vividly as the perfect success of the orchard-house culture. The orchard house under the management of Mr. Young, who has been head gardener at Audley End many years, is indeed a picture of fertility and beauty. It is one of the large span-roofed houses, with a fixed roof, glazed with 16 oz. sheet glass in pieces 20 inches by 12, the rafters being 20 inches asunder. Its dimensions are as follows :—length 90 feet, width 20 feet, height 11 feet in the centre, 5 feet at the sides. In the centre is a bed of earth 7 feet wide and 20 inches high, supported by 4-inch brick walls. The side beds are each $3\frac{1}{2}$ feet wide, and of the same height. The paths between the central and side beds are 3 feet wide and neatly paved. It is ventilated by side lights $2\frac{1}{2}$ feet by 3 feet, fixed on pivots in their centres, so that when swung open to their full extent they admit abundance of air ; both ends are glazed with large glass. At each end is an aperture over the door for the exit of the heated air, and no roof or any other mode of ventilating is employed. The trees are all in the most perfect health, and never in the course of my experience have I seen exemplified the great superiority of low side ventilation to the old-fashioned mode of pulling down sliding lights to let in and let out air.

The kitchen garden here is in a low and sheltered situation, the soil light and warm, resting on a gravelly substratum ; in spite of these favorable circumstances there is literally no fruit ; the walls, the standards and pyramids are alike bare. On entering the orchard house, what a charming contrast ! It is, to speak poetically, overflowing with fruit ; the Apricots are over, but Peaches, Nectarines and Plums are in the different stages of ripeness and ripening, and the whole house is full of beauty. Standing on the central border—for none of the pots are plunged—is a row of very fine trees, from six to eight years old, in 18-inch pots (18 inches deep and the same in diameter) ; among them are some most charming umbrageous trees—5 to 6 feet high, and 4 to 5 feet in diameter—of Elruge, Violette Hâtive, and Murray Nectarines. The crops on these were nicely arranged in thinning the fruit, so that although each tree is bearing from seven to nine dozen they do not seem crowded or overloaded with fruit.

In this central row are some fine Peach-trees of the same age and dimensions as the Nectarines. Among these are good specimens of Early Grosse Mignonne, Grosse Mignonne, Galanole, and other kinds ; these with the exception of the former variety, which is an excellent early sort, are full of fine fruit. Among the central trees Mr. Young pointed out to me three large pyramid Plums, stout trees, well furnished with branches, and 6 feet

high, in 18-inch pots ; these were removed from the open ground last November and potted. The Early Prolific, one of the kinds potted, had borne a plentiful crop. The Reine Claude de Bavay is now full of remarkably fine fruit ; the Jefferson had shed its blossoms and is fruitless ; not so however with two or three young trees of the Jefferson only two years old and 2 feet high—on these were from seven to eight dozen of very nice fruit. There is perhaps no Plum that better repays the orchard-house cultivation than the Jefferson, it bears so abundantly and gives such fine large fruit.

The late black Orleans Plum is in great favor with Mr. Young. Its deep purple bloom speckled with—with—well, perhaps amber, gives it a charming appearance ; it is very late, but always rich and juicy, in fact a perfect orchard-house Plum, which does not require to be removed out of doors to ripen its fruit, as is the case with the earlier sorts of Plums, if it is desired to have them high flavored.

Among the Peach-trees placed on the side borders I noticed with much interest a tree of the Mountaineer, in an 18-inch pot, one of the sorts raised by the late T. A. Knight, and a good melting Peach, with 10 dozen good fair-sized fruit on it. From this tree Mr. Young's foreman told me he had taken from 13 to 14 dozen when thinning, and I think I learned from the foreman that 400 dozen of Peaches and Nectarines had been taken from the trees in thinning.

The Apricot-trees had not borne so large a crop this season as in 1858, but the fruit was remarkably fine ; the Peach Apricots were like good-sized Oranges, so regularly and perfectly had they ripened. Some large robust bushes of this kind, in 18-inch pots, and from 7 to 8 years old, are nearly 4 feet high, the same in diameter, and owing to their having been pinched in during the summer, they are like sturdy Oaks ; every spur is full of blossom buds. Some of these trees are capable of bearing a peck of fruit ; I have rarely seen such robust, well-grown specimens.

Mr. Young mentioned the Alberge de Montgarnet Apricot as a most delicious early kind, not large, but rich and excellent. The flavor he thought was much improved by placing the tree out of doors in the sun just as the fruit began to color. With some kinds of Apricots this is good practice, but the Peach-Apricot is so extraordinarily rich and good when ripened under glass that no further improvement can take place—in short the fruit is perfect.

Although the fruit trees of all kinds in this house are in the most luxuriant growth, and although many trees are growing in 10-inch and 12-inch pots only, scarcely any of them are rooted through ; this is owing to their having been abundantly top-dressed with manure, and manure water occasionally used, so that they have had abundance of food at home. Top-dressing twice or thrice in summer is one of the great essentials to success in the pot culture of fruit trees. Some quasi-gardeners are however inclined not to use it, only because it has been written in a book, and such persons call themselves "practical," making it a point to follow the too often foolish impulses of their own noddles to the great injury of their employers. I knew one gardener of this sort who would not give his Peach-trees any water "till they asked for it," *i. e.*, till their leaves withered. He used to grow a rare crop of red spiders, but could not manage to get any Peaches ; of course he found fault with the system.

Mr. Young believes that his complete escape from the effects of the frost

of the 1st of last April was owing to his having shut up his house early in the day of March 31, so that the large body of warm air and the radiation from the warm borders of the earth resisted the frost. In some of the small orchard houses near Saffron Walden, the blossoms of Peach-Nectarine, and the fruit already set of the Apricots, were all entirely killed by the frost of that night. In these houses the pan of charcoal for *one* night only would have saved the crop. This is mentioned as being occasionally necessary, in the 6th edition of the "Orchard House," yet how few I fear attended to it on that fatal-to-fruit night above alluded to.

The history of the Audley End orchard house has some little interest attached to it. In 1850-51, when such houses began to be talked about, written about, praised and abused, as usual under such circumstances, Mr. Young, a good sound gardener "frae the canny north," of a respectable amount of years, *i. e.* a little above the two-score and ten, heard about them and saw some of his neighbors building them. I think he now laughingly acknowledges to having looked at the mode of culture as childish, Chinese-like, playing at fruit tree culture, boshish, unfit for a respectable garden, &c., and fit only for very poor parsons and still poorer doctors and lawyers. In the autumn of 1855 the late estimable Lord Braybrook, his employer, expressed his wish to have an orchard house, to serve not only to grow fruit in but as a promenade house in the spring and autumn months, his health being delicate.

Mr. Young immediately threw his whole heart and mind into the matter. The house was built in the course of the autumn by Mr. Dixon, the builder attached to the estate; some extra-sized trees of four or five years' growth were purchased, and in the summer of 1856 a nice crop of fruit was gathered. Every season since the success has been perfect, and at this moment no sight can be more gratifying, for not a diseased leaf exists in the house, and Mr. Young derives real pleasure from the successful results of his intelligence and perseverance. I may add that the house is remarkably well constructed, and has a light and finished appearance. If it were 12 feet high instead of 11 feet it would be an improvement.

I ought to add that Mr. Young uses his house in autumn for striking cuttings of his bedding plants in pots under the shade of the trees, and in early spring for placing the young plants to harden them off before planting them out. In winter the fruit trees alone occupy the house.—*O. H.*

ORCHARD HOUSES.

During the summer of 1847 my employer erected one of these useful appendages to a garden, of the following dimensions, *viz.*, back wall, 12 feet; front, 3 feet 4 inches; width, 8 feet 6 inches; length, 280 feet (in the clear). The ventilation and arrangement of the trees differ from most other houses of the kind. The result, however, has proved most satisfactory. We have a passage in the centre and front and back doors which divides the house into two parts. In each half both in front and back walls are ventilators, which being connected by means of small iron rods run on iron rails enables one to stand at the doors, and in less than five minutes to ventilate the whole building. The walk or footpath is 27 inches wide, and consists of 9-inch tile resting on Oak bearers, which in bad weather affords a comfortable path. Trees are trained on the back wall; but those in front are placed at right angles to the wall, thus allowing the sun to shine on both sides of them, and

also on the back wall from top to bottom, and nearly the whole floor. These constitute the main features of the house ; and I may add that the fruit is of the best description, both as regards size and quality.—*Samuel Bray, Court Cot Gardens, Stoodleigh, near Tiverton, Devon.*

JUGLANS REGIA BARTHERIANA.

THIS variety of cultivated nut (*Juglans regia*, Linné), of which we have here a drawing of the fruit and of a branch, is remarkable for the shape and principally for the length of its fruit, which is excellent to eat. The



JUGLANS REGIA BARTHERIANA.

nut being delicate, opens very easily ; the fruit in it is superior, and very abundant, considering the slight thickness of the enclosure, which comes off easily. It is a beautiful and good variety, without any fault but that of being unknown.

Its origin, like that of many others, is still a mystery ;—we owe it to M. Barthere, horticulturist, of Toulouse, who discovered it in a field, where it was growing with other trees. He says this variety is very productive, and early in bearing fruit, since in four or five years, the young plants, growing from kernels, begin to bear nuts. It appears vigorous ; the specimens before us are but a year old and very healthy.

Horticulturists or amateurs wishing to possess this variety, can address M. Barthere, who will send it to them either in plants or in fruit.—*Revue Horticole*.

WHEN the hydra becomes unwieldy, he splits himself into two parts, each of which becomes independent, and grows until the animals are formed equal to the former bulk. You may take the tentacula from one and engraft it upon another, by cutting an orifice and thrusting it in, when it immediately unites by joining heads, bodies and tails together. You may make an artificial monster, such as is rarely seen by man. No imaginary combinations of chemical or mechanical powers bear the least resemblance to this wonderful reproduction, nor can this hopeless enigma be solved ; all we can do is to behold the phenomenon in silent wonder, and praise nature for showing so much solicitude to secure the multiplication of species, and disseminate them throughout the habitable world.

If the claws of lobsters, fins of fish, heads of snails, are cut off, they will be reproduced. I once cut out the eyes of a lizard, and new eyes were formed, as perfect in every respect, as those removed ;—as I never kill or injure animals, even to aid science, I must be permitted here to state, that the lizard in question partially lost its eyes through some accident unknown to me, and I cut them out to relieve it from apparent pain, not believing in the doctrine that it is always best to kill, in order to put a creature out of suffering ; had I done so in this instance, I never would have known that eyes could be renewed in a lizard.—*Pell's Report on Fishes*.

SMEARING TREES.—It is not clear to every one whether smearing trees with tar or grease, in order to keep off insects, is mischievous or not ; some people asserting that such applications are highly dangerous, others that they are highly beneficial. Considering how important it is to settle this point, Mr. Jaeger has recorded in the *Monatsbericht für Pomologie* the result of some experiments that he has tried.

A mixture of tar and whale oil was applied to some fruit trees six years old in perfect health, in the spring before they were quite in leaf. 1. A tree, the trunk of which was covered all over by the mixture, pushed feebly ; when the tar became firm the bark burst in various places, and began to bleed there. By the autumn the tree was well nigh dead. 2. When the trees had their stems covered only one-third or half-way up, they took very little harm, pushing freely the year afterwards. 3. When only a ring a hand's breadth wide was tarred they took no harm at all.

Hence it is to be inferred that a mixture of tar and whale oil may be safely used to form a ring which caterpillars or other insects that crawl up trees from the ground cannot possibly pass.—*Botanical Magazine*.

EDITOR'S TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

THE LATE HORTICULTURAL EXHIBITIONS mark progress in almost every department. At the New York Agricultural Fair, the Horticultural Society was on hand and made a fine display of fruits and flowers—Ellwanger & Barry taking the first prizes for everything competed for. They exhibited 500 varieties of pears, apples, and plums, and 300 of pears alone; Messrs. Hooker were also well represented, as were W. S. Carpenter, A. P. Saul & Co., W. L. Ferris, John De Wolf, E. A. Stevens, W. A. Darling, Prof. Mapes, and J. Buchanan, of Astoria. Mrs. Fidelia B. Durfee, of Fall River, Mass., had the finest display of hothouse grapes,—and many competed for American varieties; the prizes were numerous. Both here, and at the Brooklyn exhibition, inconvenience was experienced from the unpropitious character of the weather, and the same may be said of the Philadelphia display, rain falling nearly the whole time. Mr. James Gordon Bennett, of the *Herald*, exhibited pumpkins weighing 175 pounds, and seems to be welcomed to the region of horticulture in which his interest seems to increase, taking premiums also for other articles. At Brooklyn and Philadelphia, Ellwanger & Barry again carried the day; at the former Mr. John Ellis's grapes got the award, and at the latter Edward Yarnall exhibited as fine bunches as have been seen. The floral exhibition at South Hall, New York, was enlivened by a representation of Miss Flora McFlimsey, whose externals were flowers, for the display of which her hoops made a most convenient clothes-line, and her "owner and maker," Mr. Wm. Fitzpatrick, showed his originality; roses, dahlias, verbenas, and *marry-golds*, as a wag called them, never danced together so merrily.

Our table is covered with "reports," premium lists and awards; these have appeared in the local papers, and our space would be entirely filled were we to attempt to copy them; the *Horticulturist* is now so largely circulated from Canada to California, that we have been led to doubt the necessity of extensively reporting many local premiums, believing that our readers in each place have read them before our monthly issue reaches their respective homes, and that our space can be more profitably filled with matter that is not found in the local issues; for instance, a reader in Montreal or Quebec cares little, in fact, would probably not read the names of the Messrs. Jones or Smiths who took a premium in California, and the numerous readers in the Southern States would scarcely appreciate the fact that Mr. Robinson had a premium in Saco, Maine. Where there is value and novelty in fruit, new modes of cultivation, etc. etc., the reader may expect to hear in these pages all about it; but a monthly journal that would undertake to chronicle all the successful efforts that are annually made,

would find no space for discussion, or in fact anything else. We make these remarks in reply to the many applications received to report from various State and County exhibitions that are already well reported at home; with these requests we should be greatly disposed to comply, for each has its distinct interest to the individual exhibitors, but our limited space forbids; we have visited personally many displays, have sympathized with the exhibitors, and would be most happy if we thought a thorough record of each was appropriate reading for a monthly journal; it would certainly be the easiest mode of filling our pages, but who would read it except those who have read it before? We are in search of information from every quarter, but have serious doubts of the propriety of making our record up of premium lists and names of plants and flowers already known to all.

THE AGRICULTURAL FAIRS are now over. They have excited unusual interest, and have been well attended and profitable; especially those held near the great cities. This feature of having the sympathies of the town's people is to be noted, for it helps to convert a set of non-producers into active farmers. Many an impetus to country life is received at these exhibitions, the increasing appetite for which is a wholesome symptom. We sincerely wish we had more ample space to record the active doings of Agriculturists and Horticulturists throughout the land.

A NEW FRUIT-GROWERS' SOCIETY has been inaugurated in Lancaster, Penn., which we are glad to record. No county that we know has greater capabilities than Lancaster, and none of equal wealth has more neglected the growth of the finer fruits. The object of this Society will be the "collection and dissemination of the observations, experiments and skill of our best pomologists; the diseases and insects injurious to fruit and fruit-trees, and their remedies; quality of soil and modes of culture; the best varieties to cultivate, etc., etc.

The meeting at once proceeded to organize itself into a society, and elected the following gentlemen to fill the several offices until the annual meeting: *President*—J. K. Eshleman; *Vice-Presidents*—Edward Jessop, Jonathan C. Baldwin, and J. Jay Libhart; *Recording Secretary*—Thomas M. Harvey; *Corresponding Secretary*—Chas. Dingee; *Treasurer*—J. B. Garber.

The remainder of the session was profitably spent in discussing the subject of trenching; the diseases of the grape prevalent in eastern Pennsylvania, pear blight, and cracking of the fruit; best varieties of the pear to cultivate on quince stock; curculio and black-knot in the plum-tree, etc., etc.

This is what is wanted, and we augur the best results from so good a beginning. Is there any reason why this Society should not be as useful as that at Rochester, diffusing a general taste, and soon indoctrinating this great county with a love of the orchard and garden, in which, we regret to say it, there is great room for improvement.

"THE GARDENS OF ENGLAND." By E. Adveno Brooke. Dedicated to the Duchess of Sutherland. London: T. McClean, 26 Haymarket.—There are some books so very expensive that they seldom find their way to the conductors of the press, and consequently they remain unknown to a large mass of even the reading public. This brings us naturally to the topic which is getting to be gradually exploded, that the gift of a book demands the return of a complimentary notice. Nothing that an editor can do is more unjust to his readers, provided he does not read the book, or praises as a matter of course. The press teems with worthless works, and periodicals assist by their notice in the dissemination of trash; the best books do not require puffing in order to get purchasers; readers of education distinguish between the good and the bad, and we are constantly reminded of the folly of those editors who fall into the error of endeavoring to make the poor take the place of good literature. Nevertheless there still prevails the practice of giving a *quid pro quo* with some poverty-stricken periodicals, to whom even a poor book has the appearance of bread and butter; they never see the good works, and do not care even to read those to which they give a certain kind of notoriety. This course is a great injury

to our literature, and misleads the bookseller, who learns to think it is no matter what sort of books he publishes since all receive equal laudation.

"The Gardens of England" is sold for about forty dollars; it is the most gorgeously colored and most attractive work that has appeared on the subject, conveying to the eye the beautiful gardens strewn with vases, statues, noble fountains, ribbon gardens, rock work, covered ways made by hedges, and all the beauties of the English style of gardening. Printed by chromolithography, often with as much as fourteen colors, the groupings having the tint of an Italian sky. The pictures of Elvaston Castle grounds with their wonderful evergreens, will attract the planter and lover of ornamentation perhaps more than the ornate pleasure grounds of the Marquis of Westminster or the Dutchess of Sutherland. The *extent* to which gardening is carried abroad, the expense incurred, and the care required to keep flower gardens as neat as the neatest parlor, is exhibited in the several pictures with admirable effect. No place of much cost is complete without water; lakes, fountains, the former though shallow, and the latter superb, are procured by pumping with steam engines. The Earl of Carlisle's place, Castle Howard, has two engines of thirty horse-power each, to supply these luxuries, and 80,000 plants are required every year to fill the acres of flower gardens. Sometimes a gentleman of moderate income fills his lake by means of a hand-pump; we have even seen a gardener exhibit this fact with great glee, saying that "with the new well" they had less labor than formerly. The overflow from the Queen's grand lake, Virginia water, so large as to have a miniature frigate upon it manned by real sailors, is about as great as the discharge from two city hydrants! The climate allows of water being exposed in these artificial lakes without its becoming offensive, just as it might do in our northern climates.

We have prepared a few wood-cuts for an early future number of the *Horticulturist* to exhibit the manner in which trees are cut, by what is called *topiary work*, into various forms by a not difficult process. These figures, in living wood and leaves, are becoming again the fashion in highly artificial grounds; meantime we recommend all who can get a peep at "The Gardens of England" to do so without delay.

THE EVILS OF DRAINAGE.—It is amusing to learn from the English and Scotch papers that while land has no chance of showing what it can do in the way of production while it is left at the mercy of all the rain that falls, draining it thoroughly has been attended by unexpected evils. All along their little *rivers*, as they call them, and far inland, the farms have a net-work of drains underground, by which as much water is brought down in three hours as used to take three weeks to reach the river. Under the bank, all along both sides, the outfalls may be seen pouring out their little streams, and every tributary brook and ditch discharges its contents with a vehemence that creates not only floods but fright. Grass-lands along the banks which used to give such fine hay, are now spoiled; the grass is blue in summer and white in winter, and makes the cattle ill, like the produce of the marsh. So they are talking of the necessity of enlarging the main water-courses to carry off this sudden irruption.

In addition to this source of trouble in some sections, others are greatly, and it is feared justly, alarmed at the fact that the fall of rain-water is decreasing, being for six years far below the average, and the prospects for the present winter are much feared, because enough has not fallen to fill the springs. There are strong fears expressed on these subjects, and in addition to a little shudder now and then that *Boney* is coming over to eat up John Bull, we shall soon hear perhaps the old cry of "agricultural distress."

DISEASE IN EVERGREENS.—A valued correspondent says: "I wrote you some year or so ago about large Norway Spruces, and even Scotch Firs being badly affected by the red and small white spider. I have now three trees nearly forty feet high, entirely dingy from these pests, which have likewise completely discolored many large pear-trees, and almost all my plums, azaleas, and Camellias. Mr. Charles Downing's pear-trees have also suffered very much from this enemy. Nothing but scrubbing the leaves seems to help the tree, and this on large

pear-trees is bad enough, while on evergreens of large size, it is of course impossible. Syringing has no effect, since the evergreens suffer all through winter, and it would seem that neither cold, nor snow, nor rain, affects them. This is the third year in this neighborhood that we have been troubled. I should be glad to know if any of your correspondents are suffering in this way. The inner part of the Norway is so affected, and is so dingy and brown, as if covered by dust, as to make no growth, and presents a complete contrast in color to the terminal shoots, which are of the usual green."

BULBS.—In a previous page will be found an extract from Mr. Dreer's directions for the cultivation of bulbs, and we may say that this season's importations from Holland have never been exceeded for size and value. Some that we have seen from Bridgeman's, Nos. 876 and 878 Broadway, are the heaviest and largest yet introduced, and we take the opportunity of saying, that at few stores of the kind in any country can be found a better assortment of everything which a garden or a gardener wants.

GRAPES.—At the late exhibition of the Pennsylvania Horticultural Society specimens of Delaware grapes, found in three different locations, in a wild state, were exhibited. This only proves that it is a native. Two new grapes were exhibited at the late Pomological Meeting at Zanesville, Ohio, by Mr. Carpenter, of Kelley's Island; the Lydia, quite distinct from all other American seedlings; the berry is of a fine yellowish green color when ripe, of good flavor, more sprightly than Isabella, and with less aroma than Catawba; berries round, medium size; bunch rather small and irregular in form; color approaching the Anna. The other is called Mottled, and is from seed of the Catawba, which it resembles in form, taste, and color, but the berries are smaller, with a mottled or clouded appearance; bunches more compact than Catawba; as early as Isabella and two weeks earlier than Catawba.

GRAPES.—Herbemonts Madeira has ripened well this season, and does not belie its reputation; Long, and Louisa, and Union Village, very nearly ripe, have been placed before us by Mr. Samuel Miller. Louisa we like about as well as Isabella, though ripening better and a little earlier. With these comes a Foreigner, "Fruited finely in the open air for the two past years." This is sweet, and will be found to be a raisin grape, which we may make valuable among us. Heber, or Weber,—for we cannot make out the label,—is "new," and a promising fruit.

The most superb Catawba grapes we have ever seen have been laid on our table by R. Buchanan, Esq., of Cincinnati, marking the fact of their excellent crop of this season. From P. R. Freas, Esq., of the Germantown *Telegraph*, we have received very superb Concord bunches.

REBECCA GRAPE.—Mr. Brooksbank, of Hudson, has favored us with fine samples of Rebecca grapes from his own vines, surpassing in excellence any grape of open air cultivation we have tasted this season. Hothouse grapes are not required where and when such Rebeccas are plentiful.

EARLY YORK PEACHES in cans, put up by George M. Stetson, of Camden, Delaware, near where they are grown in such perfection, may be ranked among the great winter luxuries. Mark the address of Mr. Stetson, and procure your stock at first hands. For a large supply we are indebted to W. S. Hilles, Esq., of Delaware.

ROSE AMERICA.—We have before us this new candidate, raised by Professor Page, and now on sale by Thomas G. Ward, of Washington, D. C. It is an acquisition, being a fragrant Noisette, hardy in the District of Columbia, and a good bloomer. From the same source are now offered several Bourbon pillar roses.

DEATH OF THOMAS NUTTALL.—This eminent botanist died in September last, at his residence near Liverpool, England, at the age (we believe) of 73. Mr. Nuttall rendered great service to American botany; being most eminently an enthusiast of the science, he came to this country the year Michaux left it, and, traversing Upper California and Oregon, completed the great work on trees of the former laborers Michaux, father and son, and his additions are

now embodied in the same set of five volumes. Mr. Nuttall was originally a printer; during his residence among us he lived in a most economical manner from necessity. A relative bequeathed him a good place and garden in England on condition that he should reside upon it six months of each year. Here he employed himself in botanical pursuits, principally in hybridizing the Himalayan Rhododendrons, and to his zeal the great dealers were much indebted. In his tastes Mr. Nuttall was simple and inexpensive; he has left a name which will last as long as flowers are loved.

DEATH OF PROFESSOR HENFREY.—We regret also to record the death of Professor Henfrey, a Fellow of the Royal and Linnæan Societies, Professor of Botany in King's College, etc. He died on the 7th of September. Prof. Henfrey has long been known as an excellent histologist and sound vegetable physiologist. We owe many dissertations of value to his pen; indeed, all he wrote marks him as a man not only familiar with the truths of science, but able to render them attractive to those who are little accustomed to think upon his topics. He is often quoted by Dr. Gray as good authority. In private life Prof. Henfrey was endeared to his friends by the gentleness of his manners and the genuine kindness of his nature. He is a public loss.

TERRA CULTURE.—A sharp stick has been sharpened by some gentlemen in Pittsburg to punch Professor Comstock on his terra-culture lecturing. General James S. Negley has, it would seem by the report of the Pittsburg papers, routed the itinerant, a committee having been appointed to ascertain the propriety of prosecuting him for obtaining money under false pretences. We receive from various quarters where this lecturer fixes himself, very sad accounts of his doings, and it is advised to give him a wide berth.

SIR HUMPHREY DAVY tells us that the reason why vegetables and fish should be plunged in boiling salt and water, is that this solution boils at a higher temperature than plain water, and that the sudden scalding fixes the albumen, mucilage, and other nutritive parts of the viand, instead of their being macerated and sodden, and so partly lost in lukewarm water.

CATALOGUES &C. RECEIVED.—J. L. Darlington & Co.'s Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs &c., Westchester, Pennsylvania.

Premium List of the State Agricultural Society for the Fourth Annual Fair, to be held at Columbia, S. C., on the 8th, 9th, 10th and 11th of November, 1859.

Wholesale Price List of Nursery grown Evergreens, &c. By Daniel Mahoney, Saco, Me.

Priced List of Hardy Native and Foreign Grape-vines. A. W. Potter, Knowlesville, Orleans County, N. Y.

No. 8. Keystone Nursery, H. A. Nish, manager, Harrisburg, Pa. A large and excellent supply of fruit trees, evergreens, roses, &c. &c., that we could wish distributed in some Counties in the neighborhood for the good of the farmers.

Prince's Select Descriptive Catalogue of Fruit and Ornamental Trees and Shrubs, Flushing, L. I., W. R. Prince & Co. There is much in this list that is rarely found elsewhere.

Descriptive Catalogue of Fruit and Ornamental Trees, Vines, Roses, &c. &c., W. Hunt & C. Manly, Galesburg, Knox Co., Illinois. This announces progress in the right direction.

Descriptive Catalogue of the Prospect Hill Nursery, S. B. Marshall, Massillon, Ohio.

Descriptive Catalogue of Fruit and Ornamental Trees, &c. &c., Naupelt & Heyer, Dubuque, Iowa.

Alden Spooner upon American and Foreign Grape-vines, 2d edition, C. M. Saxton & Co., New York. A handsome little manual.

The Wheat Plant; together with remarks on Indian Corn. By John H. Klippart. Illustrated. New York, A. O. Moore. We can only announce this work in the present number.

Hamilton County Fruit Gardens, College Hill, Ohio. A. H. Bailey, Proprietor.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, &c., at the Great Western Nurseries, Toledo, Ohio, G. H. White & F. Prentice. An admirable catalogue. Wholesale Catalogue of the same, for the spring of 1860.

Wholesale Catalogue of S. Maupay & Co., Rising Sun Nurseries, Philadelphia. We know this stock to be extensive and valuable.

Catalogue of Fruit and Ornamental Trees, &c., &c., for sale at the New Haven Nursery, by F. Trowbridge; for 1859-60. A capital collection of the best.

Essays on Peat, Muck, and Commercial Manures. By Samuel W. Johnson, Chemist to the Connecticut State Agricultural Society, and Professor of Chemistry in Yale College. The best book on its subject. It shows up charlatany manfully.

Supplement to the Descriptive Catalogue of Andre Leroy, Angers, France. A. Brugiere, Agent, 51 Cedar St., New York.

ERRATA.—In the letter from Rochester in the last number, 1000 acres is a mistake. Messrs. Ellwanger & Barry's nursery grounds all included, do not reach that amount, which a rather hasty inspection made the writer believe to be the case.

In a late letter from Missouri \$1,000 per year should have been the produce of the Concord grape, instead of \$100.

Gossip.

TENACITY OF LIFE IN SUCCULENTS.—About six months ago a branch was taken from a *Sempervivum villosum* and thrown aside as useless; but instead of withering like most branches that are treated in a similar manner, it continued its greenness nearly as much as the plant from which it was taken. In order to try how long it would live without earth or water it was hung up in a greenhouse head downwards, but still it would not die. We are often told that cats have nine lives, but this *Sempervivum* appears to have ninety and nine, for every shoot curved beautifully upwards, and had some resemblance to a chandelier in miniature. In the spring of the year the shoots threw up flower-stalks, and for two months past there has been an abundance of flowers, but how long they will continue I cannot tell. From this simple affair I began to think of revolutions in some departments of gardening, which might be of as great importance to some of your readers as Armstrong's gun in modern warfare. Only think of *Sempervivum* gardens—plants living and flowering without pots, earth, or water. Both inside and outside of windows may yet be greatly adorned in such a way, and Wardian cases with their misty atmosphere may yet be turned to the left; and a great boon it will be to housekeepers and housemaids, and a saving to carpets and crumcloths, where window gardening can be accomplished without earth or water. A pleasure it will be to many to look upon growing plants in flower, placed in a bouquet stand, or hanging in any convenient place, and not any of the dried and dyed "Immortelles" either, but real living productions. Others might be added to the list. There are the *Sedums* or *Stonecrops*, so tenacious of life that they can scarcely be kept from growing in a *hortus siccus*; and there is the *Sempervivum tectorum*: the flowers of this well-known plant are no less beautiful than they are curious in their structure, and the plant is so difficult to kill, that it almost requires cooking before it can be well dried; and if the moun tains of herbariums that have accumulated in and about London were turned over, there may be found some plants trying to make their escape from their long confinement that may yet adorn the windows of the metropolis. Those of your readers who have plenty of plants belonging to *Crassulaceæ* and *Ficoideæ* may try some of them, and observe how long they will endure hanging before they die. I may observe the *Sempervivum villosum* growing in a pot in the greenhouse has not flowered this season, although growing and healthy enough, while the branch taken from it and hung up by the heels has flowered abundantly. P. MACKENZIE.

THE first number of the third volume of Sir Wm. Hooker's valuable "Species Filicum"

(Pamplin) has appeared. Another number, "to be published shortly," will complete the volume. That before us is entirely occupied by *Lomaria* and *Blechnum*, and has some excellent figures from the hand of Mr. Wm. Wilson.

Also the 10th livraison of Mr. Weddell's admirable "*Chloris andina*," with figures by Riocreux, who, if possible, excels himself. This Part begins with *Asclepiadeæ* and ends with *Polemoniaceæ*.

The second Part of "Mr. Custis's Farm Insects" (Blackie & Son) is chiefly occupied by the enemies of the turnip crop.

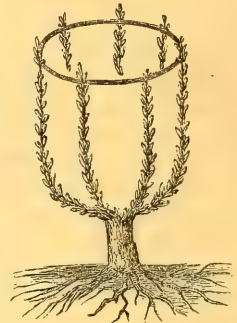
Of "*Le Jardin Fruitier de Muséum*," by M. Decaisne, Parts 22, 23, and 24, No. 22 is occupied by the Princess Royale and Sir Harry strawberries; 23 by the Marquise, Fondante des Bois, Epergne, and Bassin pears; 24 by Mouille Bouche (one of the sorts called *Verte longue*), and Jalousie pears, and the Washington and Royale de Tours Plums.

NATURE-PRINTED WORKS.—We are promised a series of nature-printed botanical works by Mr. Henry Bradbury, of London. A collection of figures, of octavo size, including every species of British ferns, is being prepared, and will be issued periodically, with descriptive text by Mr. Thomas Moore. Uniform with the above will be published nature-printed British seaweeds and nature-printed British mosses. The specimens already issued are exceedingly life-like and beautiful.

TRAINING THE GOOSEBERRY.—This prolific fruit may be taken in hand and improved in appearance as well as fruitfulness, by adopting the mode here represented, which will be found profitable, both as regards economy of space and easy access when picking.

The currant may also receive the same treatment, and a great increase in the neatness and appearance of the garden will also be the result.

CURCULIO REMEDY.—The *Valley Farmer* publishes the manner which Messrs. Ellwanger & Barry, of Rochester, take to rid their fruit-trees of this enemy. They employ two men, whose regular business it is to carry out the operation. A light wooden frame is made, on which canvas or cheap muslin is stretched, made large enough to cover the space under the branches of one-half of the tree. Also a similar one to occupy the remaining space. A branch of the tree has been previously sawed off, thus leaving a stump three or four inches long. After the "curculio catchers" are placed beneath the branches, which can be quickly done, one of the men with a mallet strikes the stump a sharp, quick blow. The "little Turks" drop, and are immediately removed from the "catchers," and the men proceed to the next tree. Many hundred trees can thus be gone over in a few hours.



GOLDEN HAMBURGH GRAPE.—We are glad to find that this admirable grape, of which we gave a figure and description, still maintains the high character we originally formed of it. Numerous reports have been in circulation tending to depreciate it in public estimation; but from what we saw recently at the meeting of the Fruit Committee of the Horticultural Society tends fully to remove any such misconception, and to confirm us in the opinion we formerly expressed.

At this meeting meeting Mr. James Veitch, of the Exotic Nursery, Chelsea, offered a premium of five guineas for the best three bunches, for which there were three competitors—Mr. Tasker, of Brighton; Mr. Allport, of Doddington Park, Nantwich; and Mr. Crambe, of Tortworth Park. Mr. Tasker's were large and handsome bunches, eight to nine inches long and heavily shouldered: the berries very large and oval, and of a greenish-yellow color. Mr. Crambe's were very large, being a foot long and seven inches across the shoulders, but looser than Mr. Tasker's; the berries large, and pale green, but with rather more flavor than Mr. Tasker's. Both of these exhibitions were not sufficiently ripened. Mr. Allport's were smaller bunches than either of the others; the berries of good size, and more approaching the amber

color of the variety when properly ripened; they were also rich in flavor. After making a careful comparison of the merits of the various exhibitions, the Committee unanimously decided on awarding the premium to Mr. Tasker.—*Collage Gardener*.

Miscellanea.

B. K. BLISS, of Springfield, Mass., says the *Country Gentleman*, is an importer of all the finest verbenas raised in France and England. His seeds are especially fine, and usually germinate well if well planted. I think if "Irene" applies to him for seed, she will not be disappointed when her plants bloom. He is noted far and wide for his success in floriculture. It is a rare treat to walk through his greenhouses, and feast your eyes upon the beauties they contain. He has orders for plants from the remotest States of the Union; even Iowa and Wisconsin are indebted to him for flowers. His greenhouses are extensive and under the best cultivation. His plants do not expend all their strength in blossoming in the forcing-houses, but are stocky and well grown, and his bedding-out plants are never forced. No one will be disappointed in plants received from him.

VARIEGATED PLANTS.—*Aspidistra lurida variegata*; *Ananassa sativa variegata*; *Begonia Griffithii*; *B. Rex*; *B. picta* (the flowers of this species contrast finely with the foliage); *Caladium bicolor*; *C. pœile*; *C. Chantinii*; *C. argyritis*; *Croton picta*; *C. variegatum*; *Dieffenbachia seguina picta*; *Dioscorea discolor*; *Dracæna terminalis*; *D. nobilis*; *Farfugium grande*; *Hydrangea Japonica variegata*; *Maranto pardina*; *M. Regalis*; *M. vittata*; *M. Warscewizii*; *M. zebrina*; *Pandanus Javanicus variegatus*; *Sonerila margaritacea*; *Tradescantia discolor vittata*. **Hard-wooded Climbers.**—*Kennedy Marryattæ*, scarlet; *K. Comptoniana*, blue; *nigricans*, purple, green; *K. macrophylla*, large-leaved and yellow. **Evergreen Shrubs.**—*Acacia armata*; *A. affinis*; *A. dealbata*; *A. spectabilis*; *A. grandis*; and the orange tribe. A strong grower, of rather rambling and herbaceous growth, is *Cobæa scandens*: one plant would soon fill a house. **Succulents.**—*Cereus speciosissimus*; *Epiphyllum speciosum*; *E. Jenkinsonii*; *E. Ackermanii*. Any of these divisions will render a back wall interesting.

DECORTICATION OF TREES.—Allow me to call attention to the following:—"The system of stripping the bark off the trunks of trees, for the purpose of destroying the insects which infest them, has now been generally applied to a large number in the Champs Elysées and elsewhere in Paris, and has led to the discovery of a curious fact, recently communicated to the Imperial Horticultural Society by M. Robert. It appears that trees may be deprived of the whole of their bark, not only without experiencing any injury, but even with considerable advantage, the operation tending to increase their power of vegetation. Elms, for example, which before the operation did not increase more than one or two millimetres in diameter each year, have been found to increase four or five when stripped of their bark. Trees having a very thin bark, such as the Birch and others, need not be stripped to obtain a similar result; it is sufficient for the purpose to make longitudinal incisions in the bark by means of a kind of three-bladed scarificator. It is now intended to subject all the young Elms in a languishing state to this treatment throughout Paris, it having answered perfectly with those planted on the fortifications. In a commercial point of view the discovery is of some importance." The above, if correct, promises most valuable results.—W. C. M., *England*.

The foregoing having received some currency in American papers, we publish it to warn all persons against a belief in it. Such a practice must inevitably destroy the trees sooner or later.

ROSES.—The following list contains, says the *Gardener's Chronicle*, some of the very finest varieties selected from the whole London exhibition. BLUSH:—Madame Vidot, Madame Rivers, Dutchess of Orleans, Auguste Mie (deep blush), Caroline de Sansal, and Mathurin Regnier. SCARLET or DARK CRIMSON:—Lord Raglan, Gen. Jacqueminot, Lion des Combats, Gen. Castellane, Prince Leon, Paul Ricaut, and Sir J. Franklin. ROSE:—Col. Rougemont, Madame Hector Jacquin, Jules Margottin, William Griffiths, Gloire de Vitry, Prince Imperial, coarse but showy; Coupe d'Hébé, and Paul Perras. YELLOWS:—Cloth of Gold, some tolerably fine blooms of which were exhibited, Decazes, and Persian Yellow. Of WHITES there is still a deficiency. The best are Dr. Henon, Princess Clementine, the old white Provins, Louise Magnan, and Beauté de Melan. STRIPES were not good. Among them we noticed Panachée d'Orleans and Cillet Parfait. Among Moss Roses we have little to recommend beyond the usual well known kinds. There were, however, some good blooms of the white Bath.

Of Roses not for competition, Mr. Cranston sent some very fine boxfuls of Gen. Jacqueminot, Old Moss, Jules Margottin, many of them measuring 5 inches across, highly colored and beautifully double; Géant des Batailles, very fine; and charming trusses of Louis Chaix, Gloire de Dijon, Duchess of Norfolk, Queen, Narcisse—pale sulphur, Crested Moss, and other favorite kinds. We also noticed some charming masses of different kinds from Messrs. Veitch, Turner, Hollamby, and Laing.

Of seedling Roses, Mr. Standish had one named Eugène Appert, a deep velvety crimson Hybrid Perpetual, said to be suitable either for pot culture or for beds. It was commended by the judges, and certainly promises to be a really fine thing. It is in the way of Victor Trouillard and other very dark Roses of that class. Except this we saw nothing really new.

Let us add that the day being fine, there was a very good attendance of visitors. We only regret that the beauty of the exhibition and the pleasure of a meeting such as this, should have been so much impaired by the fearful noise of a band which drowned all sounds except those of its own crashing instruments.

Correspondence.

MR. EDITOR:—One of the chief difficulties with many who cultivate flowers is, that they so often fail to get what they order from nurserymen. I feel constrained to state a recent experience of mine (last spring) in dealing with an establishment near Philadelphia (the name of which I do not care to injure the proprietor by giving.) I sent six dollars with a memorandum of some articles I wanted—same as what follows: one Tea Rose and five Moss Roses—the Tea Rose is right, I think. Of the five Mosses, three died immediately, or were dead when they arrived—the box of plants being little more than a mass of broken pottery and earth—the two now living are, I think, common annual roses; not having the appearance of Moss Rose bushes on the stems or foliage; they have not bloomed. I see on one of them a mark of a bud having been inserted but with no sign of life when it arrived here. I ordered some Dahlias—one white and the rest fancy or variegated. Four or five sprouts were sent, three of which are now living—two of them blooming—both solid purple, almost exactly like what I had previously; one is about half double.

I ordered three Fuschias, stating I already had one purple and red, and that I wanted one white one and the others pink or light. Of the three sent me, two have bloomed, and are not only just like each other, but almost exactly like the one I previously had and had described to the dealer. Some other little things were sent—*Kniphopia uvaria* among them—they have not bloomed and I cannot pronounce upon them.

Can so many mistakes be accidental?—perhaps so,—but I cannot run the risk of buying where three-fourths of a little invoice came wrong by accidents.

Please oblige me by publishing this;—perhaps the seller may see it, and do better with other customers.

J. R. G.

King and Queen County, Va.

MR. EDITOR:—On page 368 are some observations in reply to mine in April, on Foreign Strawberries in which I may safely say my remarks are misrepresented. The magnificent fruit brought to our market when the “little Scarlets” were also there, *might* have convinced the most incredulous. As to fruit being fine in the “cloudy atmosphere of London and worthless here”—deteriorating in a dry one, I will not stop to remark on. The writer is surprised to find me placing the Alice Maud as superior; not so the Editor of the *Horticulturist* and others (see pages 329 and 387; see also the Farmer and Gardener for September.) D. M. R. will do well to make a note now and then from such pages. Alice Maud is a very deep crimson or mulberry color, instead of a “dull greenish red,” and pray refer to the colored plate, *Horticulturist*, 1858, drawn and colored correctly from nature. D. M. R. admits that he has never appeared in competition at the Horticultural exhibitions, yet he ventures to instruct Strawberry growers of 30 or 40 years’ standing. When he has a little more experience we shall be happy to have it in print. As to hardness he mistakes my position. I said that many varieties were unsuited to this climate, but I made a discrimination; in 1852 Mr. Pierce brought to the notice of the Pomological Society, the extraordinary crops of Alice Maud, and never was it better than the past season; Congress not being in session fruit was then cheaper, but at the same time the “little Scarlets” were to be had for three and four cents the quart. I gave Dr. Bayne full credit as a gentleman and Horticulturist, but I cannot abandon my convictions when superb Foreign Strawberries are so much cultivated and liked. Testimony in plenty could be adduced from persons who never grew a foreign sort, but I submit that their testimony is valueless.

As regards my exhibiting strawberries,—I am a nurseryman, whose great object is to grow my strawberries free from mixing, and produce good large early runners for my customers,—these latter are very injurious to the formation of strong plants, or large fruit; market gardeners and exhibitors on the contrary destroy their runners and produce the largest fruit; notwithstanding these drawbacks at the Exhibition of the Washington Horticultural Society in 1857, strawberries were shown in two classes—one the largest fruit, and the other class highest flavor; in this last class I received first prize for a dish of “Vicomtesse Hericart de Thury”—at the exhibition of the same Society, in 1858, I showed a collection of strawberries for which I received first prize,—but exhibited in no other class: there was no exhibition of the Society the current year. These are the facts of the case from records in my possession, having acted as corresponding secretary of the Society from its organization; the writer of that article, I believe, was never a member of the Society, hence the error he has fallen into,—unintentional, of course, as I believe he would be the last knowingly to do any man an injustice.

The article is wound up by recommending some varieties for general culture, namely: “Hovey’s Seedling, Prince’s Scarlet Magnate, McAvoy’s Superior, and Bayne’s Favorite;” let me ask who has grown “Prince’s Scarlet Magnate,” and “Bayne’s Favorite” in this neighborhood, save Dr. B. ? and are the strawberry-growers of this city bound to accept them at once and reject varieties which they have so long successfully and extensively cultivated, because Dr. B. has failed and Mr. D. M. R. says they cannot be profitably grown? I presume Messrs. Cammack, Slater, Little & Co., can balance their own ledgers at the end of the season.

I purposely avoided saying anything about good culture, conceiving it unnecessary in the middle of the nineteenth century, the great age of horticultural progress; those who stick to the cheap system of strawberry growing, had better hug their little scarlets, and follow the old beaten path which, however, has now become very rutty.

JOHN SAUL.

Washington City, D. C.

MR. EDITOR:—Let it be known that New Rochelle and its vicinity have a horticultural society, recently formed, and if you practise what you preach, you must be interested in the movements of all newly organized societies, and ours in particular, for your periodical is extensively read hereabouts. Indeed, you should stand godfather (the *Horticulturist*) to this newly born youngster, and patiently listen to what we can truly say of him. You were not present at the auspicious moment when he was ushered into being. Wish you had been—we had a high time—all the old folks were there and some of the young; many ladies were present who of course could not keep the secret, so it leaked out that this new thing was alive and doing well. After it was dressed, word was sent out for everybody to come in and see this prodigy; they all came, and were mightily pleased with the little fellow, and said he would do to raise; but he being a kind of half orphan, and a stranger, it was uncertain if he could be supported; but he was fine looking for one so young, and had a winning way with him; therefore an appeal was made to the noble and generous present, to take care of him, bring him up, and make him what he should be. The people responded, and upwards of fifty responsible persons came forward, and in writing, before witnesses, bound themselves to support him and make him useful, an ornament, and a blessing to this community. Our pet came into being on the 27th of September, was christened on the eve of the 28th amidst fruits, flowers, music, and much rejoicing.

And now, sir, if you adopt this young *Horticulturist*, we trust you will regularly once a month give him such advice and instruction as he requires, and we who have pledged ourselves to his support, will closely watch the one and read the other; and as your interest is increased in the lad, so shall our interest be increased in you, and we shall go on hand and glove together. The youngster, under your well written counsel and advice, will grow strong, popular, and influential; when he in grateful return will not fail to scatter broad-cast, the pages of the *Horticulturist* throughout the country; thus mutually improving the mind, elevating the morals, and refining the taste of this whole community. And now, sir, to drop the figure and speak out plainly, we will state briefly what, and how we did it, that others may go and do likewise. Some half dozen gentlemen got together at the instance of one man, and said, Let us form a Horticultural Society. An exhibition was determined upon in advance of the organization; circulars were issued inviting all to bring such things as they had to make up the show—only four days' notice—and the hall was crammed full of as fine a display in fruits, flowers, and vegetables, as was ever spread to an admiring crowd in Westchester county. Everybody was surprised, that without the least preparation, unexpected, and at so short notice, so much fine fruit, so large a collection of monstrous vegetables in full variety, and such a splendid display of flowers, could have been brought together impromptu. With many doubts and fears it was undertaken, but resulted in a triumph, a decided success; was intended for one afternoon and evening—continued for three days and evenings, and was well attended. Everybody was pleased, and many competent men, fully qualified to judge, pronounced it the best country exhibition they had ever seen. The society was organized in the evening, a telling address was delivered by Frederick Prime, Esq., constitution and by-laws were adopted, and over fifty names were put down as members, and soon run up to a hundred. The floral department was rich: the design by R. Turnbull,—a large balloon, suspended from the wall, entirely of flowers,—attracted much attention; the "Castle," by the gardener to Miss Boulton, Pelham Priory, beautiful and grand; J. White, gardener to E. D. Hunter, and Mr. Noble, gardener to Mr. Hull, astonished all with the beauty and variety of their flowers. S. Carpenter and many others, competed in the floral way, and successfully. A. Bedeau contributed largely in all things, and carried more prizes than any other one in the hall. Mamaroneck turned out strong, and in their display of vegetables carried more than their share of premiums. T. S. Shepherd, R. Craighead, Lewis Walsh, J. Cox, A. P. Cummings, G. E. Vanderburgh, Mr. Harens, Knapp, and others, were there in force. The exhibition was largely indebted to Mr. Cumming for his large and fine display; in addition to a full list of superior vegetables and rare flowers, he had a full bunch

of ripe bananas, and a plate of guavas, all from his place. L. Walsh excelled in ever saw or heard of in silver-skin onions, raised on a fresh clay soil; also, two of the handsomest watermelons of the Chinese variety (new) that ever were put upon a table. Many mouths watered over them. We would like to enumerate all the rare and attractive things, but space will not permit us. We will only add, that T. David's pears and medlars, and Capt. Lefevre's blood beets, deserved a lengthy notice, and took the prizes.

In starting this society R. Turnbull set the ball in motion, and we are now indebted to him and to E. W. Andrews, Esq., F. Prime, S. Carpenter, and a very few other gentlemen, for the organization of this society.

Frederick Prime was chosen *President*; Robert Craighead, *Vice-President*; Albert Bedeau, *Treasurer*; Geo. E. Vanderburgh, *Secretary*. T. S. Shepherd, Lewis Walsh, Thaddeus Davids, Robert Turnbull, John White, *Executive Committee*.

New Rochelle, Westchester Co., N. Y.

MR. EDITOR:—In your note to an article in the October number on "Poke-weed," you say "some country people who are too lazy to make an asparagus bed, boil and eat the young shoots with a little vinegar, finding it very palatable." I have as fine asparagus as your city gardeners ever saw, and so has Judge Brewer, an eminent judge of *law* and *good eating*, too, and we, with many others in the country, think it equal to asparagus, while its medicinal qualities are superior, being eminently wholesome. Try it once yourself and you will recommend its general use. In March, go to the places where the poke-weed is to be found, put on some coarse manure, if the ground is not quite rich, and raise a hill say eighteen inches high over each root or bunch of roots, and when the first green bud makes its appearance, carefully remove the earth and cut the shoots close to the root; some will be eighteen inches long, and all bleached, resembling asparagus. Boil it until tender, serve with butter, pepper, salt, and a little vinegar. It is a dish fit for a potentate, although to be had by the peasant, with only such little labor as would not be objected to by a "lazy" man. Respectfully, W. W. W. B.

Maryland.

P. S.—The juice of the berry makes a brilliant coloring syrup for "ice cream" and "floating island;" both very popular in Virginia and Maryland as dessert.

STRAWBERRIES IN OCTOBER.—*Dear Sir*:—On the 5th or 6th inst., Mr. Griswold, who resides a little over a mile from this city and who is an extensive grower of strawberries for our market, brought in a superb dish of Burr's New Pine as large and as well ripened and colored as we could wish them to be in the month of June. Mr. Griswold attributes this fine second crop partly to the cool, showery season we have had, and partly to extraordinary cultivation. Be that as it may you can put it on record that we have had Burr's New Pine strawberries at Rochester, of full size, and every way perfect in the month of October. Not a stray berry, but enough to be brought in by the quart.

We have had no frost yet severe enough to leave its mark. Dahlias, Gladioli, Japan Lilies, all the bedding plants and late blooming annuals in the borders are gay as ever.

The lawns are rejoicing in the deepest and richest verdure, while in strong contrast, the forest trees, all around, are already decked in the gold and crimson of autumn.

Rochester, Oct. 8, 1859.

MR. EDITOR.—*The Catawba Grape*—*The Rot*.—Allow me to say a word with regard to the cause of the *rot* in the Catawba grape. I have read the article of "X. Y. Z." in your October number, and think that his theory will not hold good in all cases. I have a large vine of that variety of grape, growing on a rich, sandy-loam soil, well drained. My grapes do well until nearly the time of ripening, when they become affected and decay. I have examined them carefully, and find a small hole in the side of each grape that has been affected,—mostly where two grapes have come in contact. On further examining with a magnifying glass, I find a very small white worm, with a black head, and a brown ring below the head, in the grape,

and which, I have no doubt, has been the cause of the fruit decaying. Part of the fruit on the same bunch will be of most excellent quality. I know of no better remedy than to put up plenty of boxes for the birds to build in, and encourage them to destroy the insects.

New Brighton, Pa.

CHARLES COALE.

P. S. I would say to persons having choice plum-trees, that get a half a crop of plums,—Be content, and do not put Cannel Coal Oil about them to kill the insects, or you, too, may kill your trees—as I did. A hint to the wise is sufficient.

C. C.

(From the Genesee Farmer and Rural New Yorker.)

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

The September meeting of the Fruit-Growers' Society of Western New York was held at the Court House, September 22d. The exhibition of fruit was quite fine, especially of grapes. Delaware grapes were shown from the original vine in Ohio, by Messrs. Bissell & Salter; from Newburgh, N. Y., by Chas. Downing; from Onondaga county, by Jno. Lowe, ripened early in September; and in this county, by several gentlemen. Hartford Prolific, Concord, Clinton, and Diana, were also shown fully ripe. Isabella and Catawba were also exhibited which had begun to color. Messrs. Bissell & Salter showed some bothouse grapes; a Black Hamburg bunch, weighing more than a pound and a half, and finely colored. A seedling from the Clinton was also shown by Wm. King, of a beautiful golden color, delicious flavor, and fully ripe. There was a fair display of apples and pears, with some melons and other fruit.

SUMMER PRUNING OF THE GRAPE.

After the usual formalities of organization, subject No. 1 was read by the secretary: "Does summer pruning of the grape hasten the maturity and improve the quality of the fruit, and does it increase the size of the fruit?"

A very full expression was made by the members, some being in favor of quite close pruning, and others preferring to allow quite free growth to the vine.

H. E. Hooker thought that very much depended upon the mode of training and richness of ground, whether free summer pruning was beneficial. If trained upon trellises, it gives improved size and quality to prune. They must not be allowed to become a mere swamp of vines. Grapes which are starved are not hastened in maturity, or increased in size.

Mr. Townsend, of Niagara county, said that summer pruning must not be carried to such excess as to force the fruit buds of next year into premature development.

Mr. Smith, of Onondaga county—Some say, let nature take her course. This is well, if we commence that way. If we commence differently, we must continue so. In the natural soil, without any pruning, the vine gives a pretty good crop, but perhaps not quite as large fruit; but when we commence with highly manured soil and high culture, we must confine the vine to trellises, and it is necessary to summer prune; and the only question is to what extent.

P. P. Bristol, of Livingston county—To let the grape-vine grow entirely its own way, will give us the poorest specimens of grapes. The habit of the vine seems to correspond to all other plants, when wild, *i. e.*, to set more fruit than it is capable of maturing well. Dr. Underhill cuts back half the branches and thins out half of the bunches of fruit.

Mr. Herendeen, of Wayne county—The sap goes first to the leaves, and on its return flow reaches the fruit. We must not summer prune so severely as to injure the health of the vine.

Mr. Moody, of Lockport—With proper summer pruning, the buds may be developed so as to bear surely every year.

Mr. Ringueberg, of Niagara county, said his vines averaged sixteen pounds of fruit to the vine, planted in rows four feet apart, and eight feet apart in the row. After fruit has set, take off the ends of the bearing wood, leaving four leaves from the fruit.

Mr. Ainsworth, of Ontario county, had been led, by repeated experiments, to think summer pruning beneficial. His neighbor Wilcox thereby had large crops *ten* days before vines by their sides, which were not pruned, and of quality decidedly better. Wood is greatly improved by summer pruning, and much better prepared to stand the winter.

Mr. Bronson had experimented upon an Isabella vine in a favorable location. The unpruned vine kept growing till frost came, but did not have a single ripe grape; while the vines all around which were summer-pruned, ripened their fruit well.

Mr. Hoag, of Niagara county, thought there was not much difference in the time of ripening; but judicious summer pruning produced a much larger crop.

GRAPES FOR GENERAL CULTIVATION.

Question No. 2.—"Can any other varieties of grapes beside Isabella be recommended for general cultivation?"

Mr. Hoag, of Lockport, thought highly of the Hartford Prolific, which ripened four weeks earlier than the Isabella; and when not grown in the shade, does not drop very badly from the bunch. The Delaware ripened with him the 10th September, and was a better grape than any other. The Concord is a very fine grape; ripens after the Hartford Prolific, but is ten days or two weeks before the Isabella. The Diana ripens a few days after the Concord; a few berries on each bunch ripen very early, but they hang on finely, and all are sweet and fine flavored. He mentioned also the Perkins and Rebecca, and wished to hear other members as to the Diana and Delaware.

Mr. Barry wished to have the varieties tested thoroughly, and tried in vineyard culture, too, and to see if they prove in all locations hardy, productive, and to ripen early. The Diana possesses all the qualities that are required for a general, profitable, and popular grape. When ripe, it is of most delicious quality, and we cannot be wrong in recommending it. No one can be sorry for having recommended the Diana. The Delaware is a most important acquisition. The Concord, he thought, is going to be a valuable grape, although nothing like so fine in quality. The Hartford Prolific is the earliest grape we have in our nursery, but it drops badly from the bunch. The Northern Muscadine is a little earlier, but drops worse. As yet, would recommend but one variety, and that one is the Diana.

H. E. Hooker felt we must be guided by experience. The Delaware we shall find, no doubt, a desirable grape,—it is so hardy and productive. On my own premises it is now fully ripe. On the same open trellis, where the Isabella is unripe and unfit to eat, the Delaware is good. Certainly I should say it is a fortnight or three weeks earlier than the Isabella. Hartford Prolific is the earliest grape that I have ripened. For my own use, it is a very good grape. Concord follows shortly after Hartford Prolific; and though I can not praise it very highly, still it ripens a fortnight or so earlier than the Isabella. Rebecca I have no confidence in, its leaves burn so much in the sun. The Diana is a grape which I esteem very highly; a good deal better every year I grow it. The fruit is very rich and delicious, and the vine is a great bearer.

Mr. Hoag, of Niagara county—The Delaware ripens with us about the 10th of September, and we esteem it superior to the Diana in every respect except the size of its berries. One of our two-year-old vines produced this year one hundred clusters of grapes.

Mr. Moody—The Delaware is very valuable for garden purposes; but no farmer ought to set out an acre of it. The Diana is a strong grower, equally as a hardy and a greater bearer than the Isabella; shorter jointed vine; more buds, and ripens earlier, and will hang on the vines to the end of the very longest season, without dropping.

B. Hodge, of Erie county—This is an important inquiry. With me, three-quarters of the seasons the Isabella does not ripen. It is poor, insipid, and worthless. There now is a sort of grape mania for some better grape. Hundreds and hundreds of seedlings will be brought forward, and the public mind is sensitive to know if we have any good varieties equal to the Isabella, and that ripen earlier. If we can get such they will be valuable. People call the Isabella ripe as soon as they become a little brownish; but the Isabella, when fully ripe, is a dead black—as black as any Concord I ever saw.

Mr. Barry would mention that old favorite the Clinton—small, but never drops, ripens early, and keeps till New Year's day. Is most easily propagated, will run and bear everywhere, whether pruned or not. If we ever turn our attention to wine-making, the Clinton will be the grape.

Mr. Covey had kept the Clinton until the last of February; and the longer they were kept, the sweeter they were.

Mr. Hoag here remarked that the Diana was an excellent keeper.

Dr. Miner, of Monroe county, had raised the Diana for five years—five hundred and more vines. In same condition, upon same trellis, had found them produce as much weight as Isabella, but far better in quality and earlier in ripening. Never got a ripe Isabella in same locations were the Diana ripened every year, and quality was far superior. Had raised Clinton longer than Diana, but considered it worthless as a table grape, by the side of the Diana.

The Society then, by a unanimous vote, recommended the Diana for general cultivation in western New York.

Afternoon Session.

PEARS FOR GENERAL CULTIVATION.

Question No. 3.—“What varieties of pears have proved productive and of good quality, in all parts of western New York?”

B. Hodge, of Erie county, spoke of the Bartlett in the highest terms. The Flemish Beauty is a most excellent pear. When picked early and ripened in the house, it is very delicious. In Buffalo, the Stevens' Genesee has proved a very fine pear, and the Seckel is universally admired.

Mr. Towns, of Niagara county—The Louise Bonne de Jersey, as a dwarf, exceeds any variety in productiveness that I have ever cultivated. The Duchesse d'Angouleme also, as a dwarf, is fine. The only fault I have to find with the Vicar of Winkfield, is its abundant bearing—bears so much that the fruit must be thinned. Among the new pears, I think the Howell

promises to be one of our most valuable fruits. It is of large size, bright color, fine appearance, and of first rate excellence. The Tyson, where known, is a universal favorite, and an abundant bearer, either as a standard or a dwarf. As to the Brandywine; I don't know but that if I were compelled to select one variety I should select the Brandywine. Belle Lucrative—any one who has ever eaten them, need not have a word said about them. Osband's Summer—everybody that knows it will have it. Bears fine crops. I have only mentioned such sorts as I have tested from six to ten years, and have invariably found them to be of the very finest quality.

Mr. Ainsworth, of Ontario county—The Tyson is a very fine pear; bears a full crop, and is a hardy tree. The Bartlett is very fine, and the tree bears young. The Flemish Beauty has one fault, and that is, that it sometimes rots at the core. Belle Lucrative is very fine and sweet. The Seckle has succeeded in our section well. *Mr. Dixon* had the first tree near us, and it has always borne each year. Don't think there is any tree will excel them as to quantity (unless perhaps Bartlett), and its fruit sells for \$16 per barrel. The Virgalieu, at Canandaigua, and in the Wyoming valley, does not crack; fruit very fine, and sells at \$22 per barrel. Trees bear very full. Louise Bonne de Jersey has done well with me. I have a tree now twelve years old with a barrel of pears on it. The fruit is one-third larger on dwarf than on standard trees.

Mr. Barry thought this question was a very difficult one to decide. We need trees that are hardy, productive, and free from blight; and my opinion is in favor of the Duchesse d'Angouleme, Louise Bonne de Jersey, and Bartlett. The Virgalieu in one place in our grounds all cracked one year, and the next they did not one. Notwithstanding all the failures, I still regard it as one of the best we have. It will sell at an enormous price—twice that of any other. I would not leave it out. Beurré Giffard—fine, if gathered early. Doyenne d'Ete. Rostiezer does well everywhere, and does not crack. Tyson is a superb tree, and is worth growing for its beauty, while its fruit is one of first quality. Flemish Beauty is another of the No. 1 varieties: Howell, Belle Lucrative. Beurré d'Angou keeps a month longer than the Virgalieu. The Sheldon is one of the finest of all pears, and a native of western New York, beside; fruit most delicious. Although it won't grow on quince, it is a superb grower on pear. For winter pears I would recommend two—Lawrence and Winter Nells.

H. E. Hooker—The list of pears is so good—unexceptionable, in fact—that I cannot add to it.

BEST MANURE FOR TREES, &C.

"What are the best manures for the apple, pear, and other fruits, and what are the best means to renovate old apple orchards?"

W. P. Townsend remembered how the old orchard got all mossy, and his father set him to scrape the bark of the trees. After working a while he got sick of it, and told his father if he would let him take the team and draw some manure into the old orchard he could scrape the trees without injuring the bark. He drew in upon those premises an average of half a load to each tree; next year the bark began to peel, and of course to bring with it the moss, and they increased in vigor. That summer, turned the hogs in upon the orchard, and they pretty thoroughly rooted it all over. Even to the tops of the trees the old bark has started, and the body had all the thrifty and vigorous look of young trees. The fruit that used to be half or three-fourths wormy, is now fair, smooth, and free from vermin. By invigorating the trees he destroyed the insects that had destroyed the fruit. Common barn-yard manure was best for trees. Had tried it for pear-trees also. It should be applied in the fall, and then you get the benefit in the next two years' crop. Apply twenty-five loads to the acre every year in the fall.

Mr. Langworthy thought that in heavy clay grounds muck would be useful to lighten it up.

BLACK RASPBERRY—CULTURE AND VALUE.

"The Black Cap Raspberry—what is its value as a market berry, and the best modes of its cultivation?"

H. E. Hooker—This Society has heard, at a former meeting, a very elaborate report by Mr. H. N. Doolittle about the cultivation of the Improved Black Cap, and needs not that I should add to it. I am persuaded, from my own experience in cultivation, that it is destined to be a very popular and a very useful fruit; there is scarcely any one of the small fruits which is so valuable, and the improved sort is larger and more productive than the wild one, and is eminently desirable; very good for table use, and for all cooking purposes, for jellies, tarts, pies, for drying—in short, for all the numerous purposes for which a house-keeper buys berries, this is unequalled. More of them could be sold in the market than could be sold of strawberries. It is a very handsome dish, no hulls to be picked out, no dirt to be washed off, and they have thus far brought a higher price than strawberries. Mr. H. considered it eminently profitable and worthy the attention of all fruit-growers. Should be planted in rows six or eight feet apart, (eight feet apart is best), and the bushes three feet apart in the rows. First year do all the cultivation with a horse cultivator. The following spring tie the plants to a trellis or to a stake. The canes of the second year make a growth of five or six or seven feet high, some-

times even eight or nine feet, but they ought in that case to be headed off at six feet high. To support these, form a wire trellis about four feet high.

Benj. Fish thought there was no necessity of the trellis spoken of by Mr. Hooker. Grow good strong canes, and in the spring these should be cut back to a point where they are stiff and will bear the weight of the fruit without support.

B. Hodge had some experience in the cultivation of the Black Cap Raspberry, and was satisfied that it is one of the best of the small fruits. The danger in cultivation was in their liability to get the plants too thick. Thought with Mr. Hooker that rows eight feet apart and plants three feet apart in the row was best. Would caution cultivators against a certain portion of the plants which are barren. These can be easily distinguished by an eye well versed in the matter, and they must be rooted out. After the fruit has been gathered in the autumn the old cane should be cut out, and it then gives a chance for the new plants to come up from the crown of the old. Agreed with Mr. Hooker that the trellis was the best plan for cultivating them. There seems to be a sad want of attention to this plant. The Chicago market has been supplied from Cincinnati and Kentucky, and we had even brought them to Buffalo from Cincinnati at \$4 00 per bushel. In my estimation it is a very desirable fruit indeed, and immediately follows the strawberry.

Col. E. C. Frost had cultivated the Yellow Cap Raspberry for the last ten years, and thinks that it grows stronger and is really more productive than the Black Cap, and that the fruit is better flavored.

BLACKBERRIES—VALUE AND CULTURE.

"The New Rochelle and other blackberries—what are their value, and the best methods of pruning?"

Mr. Barry, being called upon, said the blackberry was easy of culture, productive, and needs a good soil to produce fine fruit, the richer the better. The New Rochelle were good when fully ripe, but preferred the Dorchester for quality, though it was less productive.

S. H. Ainsworth said Mr. Miner, of Honeoye Falls, had grown a seedling-trailing blackberry from seed, which was large, productive, and of excellent quality. In fact, he had two seedlings of about equal quality, and of the same character, one about ten days earlier than the other. Had been acquainted with this fruit for three years. It is like our wild trailing blackberries, but a vast improvement, and much sweeter than either New Rochelle or Dorchester. Perhaps it was not quite as productive as the former. Berries three-fourths of an inch in diameter, and an inch and a quarter, or more, in length. One of the varieties was apt to form a few imperfect berries, and this was the only drawback.

Mr. Miner, being present, was called upon for facts in regard to his seedling blackberries. He said the flavor was excellent, better than New Rochelle or Dorchester. Thought quite as productive as the former. Had two sorts which he considered good, one ten days earlier; the early variety always had perfect berries; on the late sort a few berries would not be perfect. Had raised thousands of seedling blackberries from the Michigan running blackberry, but obtained only these two that he considered worthy of cultivation. Planted three feet apart one way, and eight the other. Had them in cultivation six years. Will produce at the rate of fifty bushels to the acre. They make a large growth, some running twenty feet, and always ten or twelve. Cut them back to about six feet, and wind to stakes and fasten. The fruit in this way is on the outside, where it can be easily picked. The new wood is allowed to trail on the ground. Propagated to the tips of the branches, the same as the Black Raspberry. Never knew an inch of the wood to be killed by the winter.

CURRENTS—BEST VARIETIES AND CULTURE.

"What are the best methods of cultivation, and which are the best varieties of the currant for cultivation?"

Mr. Barry's opinion being asked in regard to currants, said he had nothing to offer particularly new or instructive. The currant needed plenty of manure and shortening one-third, or thereabouts, of the bearing branches. The White Grape and Victoria he considered the best currants. The Versailles is said to be as large as Cherry, and of better quality. The Cherry is large, quite acid, but is not a shy bearer, as it has been called sometimes, if properly treated.

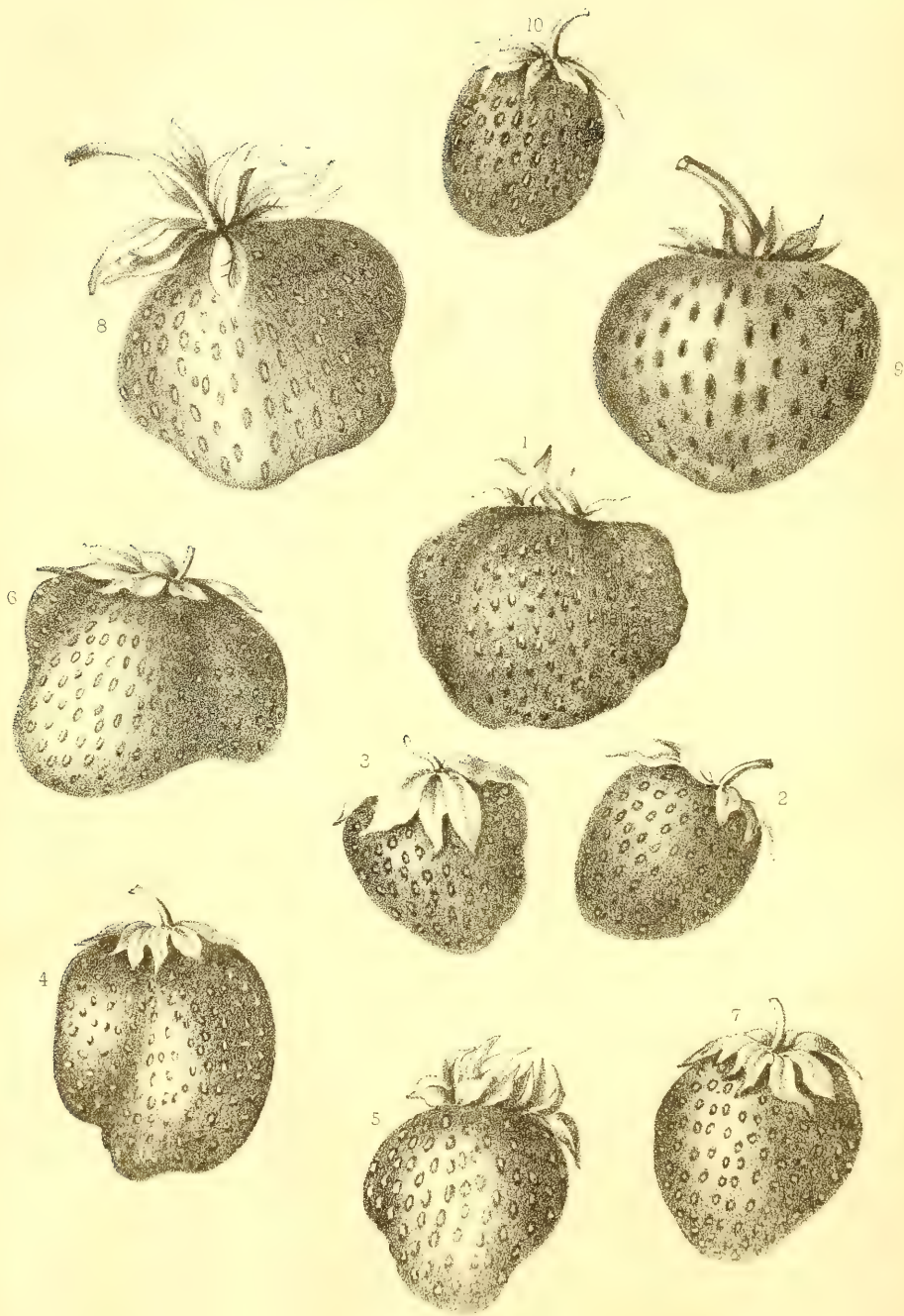
H. E. Hooker thought for market purposes the Cherry was the best currant; its fine size and appearance make it sell well. It is the most popular variety with the growers around New York.

Mr. Ainsworth found the Cherry Currant very productive, far superior in this respect to White Grape or Victoria. It also hangs on the bushes a long time after ripening.

The best Black Currant for cultivation was inquired for, when Mr. Barry said there was little difference between the Black English and Black Naples, and Mr. Hooker thought the Black Naples the most productive.

At about 10 o'clock P. M., after voting that the Annual Meeting should be held in Rochester, the Society adjourned.





1. Black Star.
 2. Queen Victoria.
 3. Alice Moore.

4. Honor de Belgique.
 5. Marylanda.
 6. Triumph of Gand.

7. Brighton Pine.
 8. Adelaide.
 9. Downer's Fecund Seedling.
 10. Rival Hudson.

FOR THE HORTICULTURIST,
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Country Life.



OW to awaken curiosity in the youthful mind should be one of the objects of those who endeavor to prepare them for a life of usefulness to themselves, their families, and their country. Occasionally there comes to us an article respecting the progress made by a clergyman in Hitcham, England, who has, unaided, established a little school for his neighbors' children. Professor Henslow, as he is called, has taught his little companions *how to observe*, and he has thus prepared them for enjoying life in the country, no less than to be benefactors to future generations.

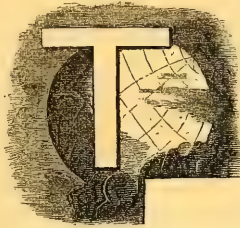
At a late "Laborers' and Mechanics' Horticultural Show," at Hitcham, under our Professor and in his rectory grounds were two tents of excellent construction, "one of large dimensions for the Show, and the other," says the *Gardener's Chronicle*, "called the Marquee Museum, containing objects of interest on which the Professor gave instructive little lectures in the course of the day. On this last occasion the whole front of the long tent outside had arranged before it a row of most noble gourds, the seeds of which were given some time since by Dr. Lindley. One of them weighed 111 lbs. ; and the three next, the produce of a single plant, full 2 cwt. On the summit of this tent and in the front, were various devices in Dahlias and China Asters, due to the zeal and skill of the Professor's servants. In the interior were arranged the flowers, fruits, and vegetable produce of the cottagers, to which the prizes were assigned. They were most creditable to the humble cultivators, and proved that some high encomiums by the judges in the allotment report were well merited. A stuffed rook, which seemed to look down archly on the scene, had, written under it by the Professor, "The Farmer's Friend," and his beak was covered with mould to show how he searched in the soil for grubs. There were placed on one of the adjacent stands large bundles of wild fruits collected for prizes by the children of the school, many of whom are excellent botanists. Instead of nosegays they were called *mouthgays*, and the one that gained the first prize had in it 34 specimens, all accurately named, including Elder-berries, Sloes, Nuts, Guelder Rose berries, wild Carrots, &c. Beautiful herbaria were also shown, collected and dried by the same young people ; and in a recent excursion one had gathered and named 12 wild flowers not found near Hitcham. Thus the religious and other lessons of the school are mingled with improving knowledge of the natural productions of the district ; and the high cultivation of the allotments is coupled with instruction in plants growing in the fields and hedges. About two o'clock the company, consisting of the families from the neighborhood, and the poor, all gathered round the Professor, while he delivered a most interesting *lecture*, as he called it, on the contents of his Marquee Museum. This Marquee is altogether original. Its name appears in front in letters formed of common snail-shells, surrounded by ornamental designs in mussel-shells, looking like mother-of-pearl. It is divided into two compartments by a noble piece of tappa

cloth, from the bark of the Paper Mulberry of the Tonga Islands. On the shelves on each side were arranged the objects in such a way as to attract attention. A group of sloe-worms were so placed as to be supposed to be holding conversation on the disaster of the loss of their tails, which is the accident most commonly befalling them ; and two ninny toads were set up as if dancing a minuet, to the great amusement of the juveniles. The chief subjects of the *lecturet* were aluminium, fine specimens of which were exhibited, and the manufacture of candles from Palm-oil, and paraffine derived from petroleum, with some observations on certain fossils found in the Suffolk drift of the locality. These explanations were given in the happiest manner. Then began the distribution of the prizes, and John Bull had the first prize for allotment Wheat, and Jack Robinson the second, names that elicited innocent fun. Next came results of experiments on 55 allotments, and, after certain other business was transacted, an orderly and sociable tea. The conduct of the humbler classes in the midst of the large gathering was most modest and decorous, and all partook more or less of the hospitality and enjoyed the courtesy of their talented host. A more intellectual rural fête cannot be conceived. All seemed to enter into it with pleasure and spirit. Instead of idling and sauntering without objects, the children of the Hitcham schools become intelligent observers of Nature, while they are directed to lift up their young minds to its adorable and infinitely wise and good Author and Creator. One pupil teacher had actually collected in rural strolls, and afterwards dried and correctly named, more than two hundred and fifty specimens of plants. The effect of such pursuits so well directed was visible in the countenances of the young people, which expressed a modest intelligence of a most pleasing kind. These children are not made botanists at the expense of higher and more useful knowledge in the economy of their daily life, but are taught to make science within their humble reach an improving amusement. It is true the people of Hitcham have a leader of rare gifts and high attainments, but such an example might be more largely followed, and in the hope that it may be so we point to it for imitation. Long may Professor Henslow be spared, and may many others who have like opportunities learn how to make the field and the garden, as well as the school-room and desk, helpful to knowledge and promotive of improving enjoyment."

Here is something worthy of imitation. We have a large body of Clergymen among us but half employed—nay, many to whom their time is a sorrowful burden. How wise they would be, and how wise they could make the next generation, if they would imitate Professor Henslow !

We have already chronicled the establishment of children's gardens for the higher classes in Belgravia, London. These are not merely gardens, but sheltered glass structures, where children may have that necessary ingredient of growth, light, but instruction in various things that will leave more valuable impressions than the mere dressing of dolls or shooting marbles. An instructor attends to teach the youngsters to construct houses, even to model in prepared clay, to employ their infant minds in mathematical patterns made of ornamented blocks, and, in short, in a thousand ways their thoughts are brought into use. Will it be astonishing if from the Hitcham school there should come the greatest botanist of the next generation, or from a Children's Garden the greatest sculptor of the age ? We are yet in the infancy of teaching, and our rural districts tell too plainly of the absence of proper schools.

IOWA PRAIRIE SKETCHES.—No. 2.



HE contrast to view first. Just three months have elapsed, and how great the change their fleeting days have brought !

Vast fields of grass, in gently undulating waves, now rise, and bow and rise again before the breeze ; and each flitting cloud which veils the sky is revealed in shadowy form upon its surface, frequently changing its hue from a light chrome green to a dark mari-

time tint, which softens and gives grace to a scene so extended that otherwise it would be tiresome and even painful to the eye.

The numerous swells of land,—which, from almost any position, may be counted by hundreds,—covered by droves of cattle, made up of the stock of settlers, herding together, and seeking their own pasture, reminds one of the beautiful passage of Scripture, in which the sacred writer speaks of “The cattle upon a thousand hills,” and illustrates it more forcibly than words could possibly do. This, indeed, seems to be a peculiar and most beautiful feature of the country ; the farmer fencing only that which he intends to till, and leaving the cattle free to find pasture on the untold acres of meadow not yet broken from the natural sod ; while roads are marked to the observer only by the beaten tracks which wind along the “divides,” and by the rude bridges here and there thrown across the sloughs. But as the country becomes older and more improved, (?) this custom, so ancient and classically beautiful, instead of being kept up by sending out herdsmen, and shepherds to “watch the flocks by night,” and follow them day, will undoubtedly be merged into the pent-up *pasture lots* of the many petty owners.

The *enclosed* fields now begin to show the richness of the soil ; and the heart of the farmer is encouraged, as he looks over his ripening grain and extensive cornfields, standing rank and green, and so high that a horseman riding through could scarcely be seen. His garden, too, exhibits an abundance of everything in the vegetable line, for furnishing his table ; and the long healthy vines which creep over the soft black soil, are so thickly set with melons that he begins to feel generous, and to congratulate himself with the hope that in a few weeks more he can indulge in social gatherings, and give his town friends a treat to their luscious juices.

The woodlands upon the borders of the water-courses have now put on “their coronal of green,” and look extremely inviting ; and the foliage,—owing probably to the winds which almost constantly sweep over the country,—has a freshness and cleanness about it which we never see elsewhere, it being entirely free from all accumulation of dust and smoke. But in our prairie homes, so far from the timber that we can see it but dimly in the distance, and not a near tree or bush to break the glaring light or temper the heat of these scorching days—the mercury ranging from 90 to 100 deg. F.—we begin to long for the cool, refreshing groves which cluster about almost every homestead of the older States ; and many who have recently come from the east, and bought on the prairie, regret not having located in the timber ; and some pay extremely high prices to secure farms there. Yet, on the whole, it is perhaps not altogether best, for it harbors

innumerable insects, which quite destroy one's comfort; and even the grazing animals show their preference for the prairie in summer by always going there to feed and rest, although the woodland is open to their range. Ague and fevers, too, are almost entirely confined to timber locations. It is in fact quite probable, that emigrants can *much sooner* fit up homes, and such as are in *all respects most desirable*, by building where they have no trees to cut, brush to burn, or roots to dig out, but can at once put hand to the plow, and in a few months reap an abundant harvest; and then plant and train their own groves,—letting in here the bright sunshine, and there the ever-stirring breeze; and be free from swamp, under-brush, flies and mosquitos, ague and fevers.

The wheat crop,—which was an entire failure last year, on account of the constant rains just before harvest,—is now quite good, the *average* yield being, it is supposed, about two-thirds of what this soil produces in a favorable season. Some fields, it is said, were never better than now, but others are deficient in consequence of the poor seed which was sown.

The great June frost, so destructive in many parts of the country, did little or no harm here, our vegetables being in a less advanced stage at the time.

Corn could not look better than it now does, and it is estimated that the *average* yield will be about 75 bushels per acre. Better oats were never seen. Sugar cane—Sorghum—is very fine. And such grass! The wild prairie grass—for other kinds are not yet introduced to any extent—gives pasture and meadows, which indicate future wealth to the State, only in the raising of stock.

The deep rich loam, and the growth which has sprung from it in three months, naturally leads one to suppose that horticulture, as well as farming, must succeed here. But as yet there is scarcely anything done in that line, though beginnings are being made almost everywhere—and several horticultural gardens have for some time been in existence, but with what success, I cannot say.

Fruit, it is thought by many of the oldest settlers, will not succeed well. The long cold winter, the short, very hot summer, and the depredations of the *Gopher*, seem to most people difficulties not to be overcome. But the truth probably is, that the attention of the settlers generally and almost necessarily has been given to the cultivation of *bread* crops, and thus fruit has never had a fair trial. But time has now come for experimenting more fully upon the capabilities of the soil and climate. A State Agricultural College is about being founded, on a farm of 600 acres, *just in the centre of the State*, where experiments will be made, perseveringly and understandingly, to ascertain what can be raised, to what extent, and the best way of doing it,—and at the same time to *educate* the *future* cultivators of the soil in such a way as will make them efficient and successful laborers.

This is a good beginning for a State yet in its infancy, and speaks well for the intelligence and enterprise of the people.

July 20th.

"MINNIE."

PINUS SYLVESTRIS SPIRALIS.

THE *Pinus Sylvestris Spiralis* is the most singular variety of the Sylvestrus Pine ; it presents a character never shown until now among any coniferous trees. This character, to which we wish to draw the attention of landscape Horticulturists, lies in the leaves ; these, instead of being more or less straightened, as they usually are in all species of Pine, are bent back upon the branches, where they form a kind of rings, or rather, spiral lines, the origin of the name *spiralis* given to it. This variety, as well as most others, is not the work of man, it is the result of a special growth, or as we say, a sport of nature, a phrase we adopt to relieve ourselves from embarrassment when we want to explain certain phenomena. We do not wish to introduce any hypothesis into our subject, but here is the fact, and whatever may be the cause of it, let us profit by it, and if we can, as is most likely to be the case, appropriate and establish it by means of grafts, we shall have one more ornament for our landscape gardens. The amateurs of Coniferæ will include in their collections a variety which, though the last to come, will in the end occupy the first position.

The owner of this variety is M. A. Sénécayze, a horticultural-nursery man at Bourg-Argental ; the specimen he owns, and from which we take our sample, is about 18 feet high ; it is vigorous and rapid in its growth, perhaps more so than any in our neighborhood. One remarkable, we might say happy fact, is, that the more vigorous the tree, the more its leaves twist around or bend back, and consequently the more beautiful it is.—*Revue Horticole*.

THE SCUPPERNONG GRAPE.

IF I am not mistaken, a drawing and description of the Scuppernong grape has never appeared in the "Horticulturist," and as there is some misapprehension in relation to it at the North where it of necessity is but imperfectly known, I have made a drawing, and submit the following description :

The Scuppernong is a seedling from the Muscadine, Bullace, Bullet, or Bull grape of the Southern States, which is found growing wild from North Carolina to Louisiana. Its botanical name is *Vitis Vulpina*, and we think it has never been found on the northern slope of the Alleghany Mountains.

To the above common names Downing adds that of Fox grape; this we think a mistake ; we have never known it to be designated by that name at the South. The common name of *Vitis Labrusca* at the south is that of Fox grape; it is known by no other name in Georgia. So far as we can learn, all the



seedlings raised and fruited from the Scuppernong have produced the Brown or Black Muscadine, which is the color of its parent.

The Scuppernong is not diœcious as stated by Downing, but has perfect flowers, while its parent is sometimes monœcious and at others diœcious ; the berry is from three-fourths of an inch to one inch in diameter ; they grow, in clusters varying from two to eight, which are of a pale dull green when fully ripe : the leaves are from two to four inches across, glossy on both surfaces, of cordate form and coarsely serrated. The Vine is very distinct from all others. While it is one of the most rampant growers, its branches are slender and wiry ; the bark is unlike that of any other, being smooth, of an ashy color, and closely specked with small specks of white.

One peculiarity of this grape is, it is free from all diseases, rot, or mildew, in either wood, leaves or fruit. To our mind and opinion it is the great grape of the present day.

In flavor, when well ripened, it is very sweet, with very little if any pulp, and but a trace of Foxy aroma, less of the latter than either Catawba or Diana ; when thoroughly ripe the pulp is entirely dissolved into a luscious juice.

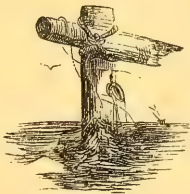
The wild Muscadine has, we are informed, been sent to the north as the Scuppernong. E. Law Rogers, of Baltimore, recently informed us that he had the Scuppernong growing there, which bore dark brown grapes, and was as hard as a crab apple, and appeared quite surprised when we informed him that the Scuppernong was a white or green grape.

The skin of the Muscadine is much thicker, and the pulp much harder than those of the Scuppernong.

As a wine grape, we doubt whether an equal can be found in the world, as being adapted to the Southern States, and we are fully prepared to expect that the very choicest wines will be made from it, with a little more experience.

J. VAN BUREN.

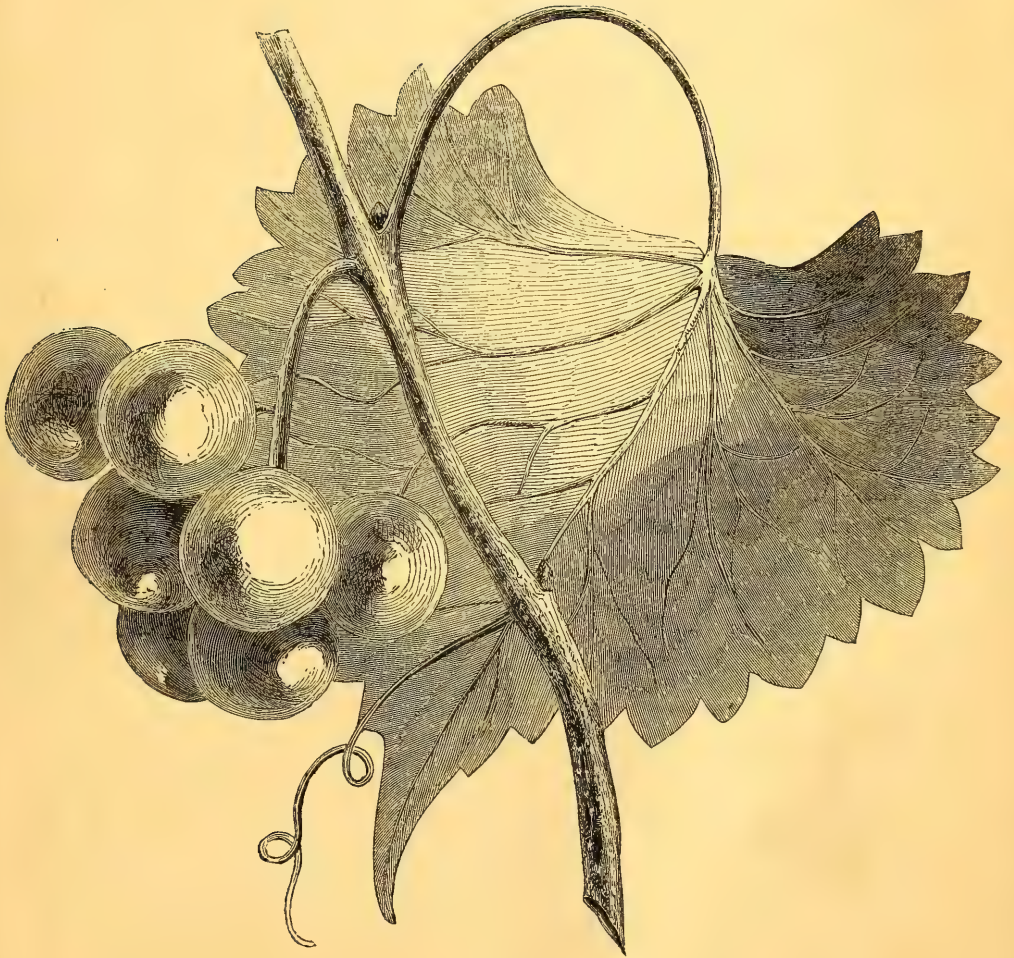
TREES OF CALIFORNIA.



THE following, *the latest* account of the trees of this region, is from the letters of Horace Greeley, to the *Tribune*. Though entirely unscientific, it is worth preserving in these pages. The *enormous* age of the "big trees" is discredited by the observations of Dr. Gray, as our readers will recollect.

THE SIERRA NEVADA.

And here let me renew my tribute to the marvellous bounty and beauty of the forests of this whole mountain region. The Sierra Nevadas lack the glorious glaciers, the frequent rains, the rich verdure, the abundant cataracts of the Alps ; but they far surpass them—they surpass any other mountains I ever saw—in the wealth and grace of their trees. Look down from almost any of their peaks, and your range of vision is filled, bounded, satisfied, by what might be termed a tempest-tossed sea of evergreens, filling every upland valley, covering every hillside, crowning every peak but the highest, with their unfading luxuri-



THE SCUPPERNONG GRAPE.

ance. That I saw during this day's travel many hundreds of Pines eight feet in diameter, with Cedars at least six feet, I am confident; and there were miles after miles of such and smaller trees of like genus standing as thick as they could grow. Steep mountain-sides, allowing these giants to grow, rank above rank, without obstructing each other's sunshine, seem peculiarly favorable to the production of these serviceable giants. But the Summit Meadows are peculiar in their heavy fringe of Balsam Fir, of all sizes from those barely one foot high to those hardly less than two hundred, their branches surrounding them in collars, their extremities gracefully bent down by the weight of Winter snows, making them here, I am confident, the most beautiful trees on earth. The dry promontories which separate these meadows are also covered with a species of Spruce, which is only less graceful than the Fir aforesaid. I never before enjoyed such a tree-feast as on this wearing, difficult ride.

THE BIG TREES AT MARIPOSA.

In measuring trees, it is so easy to exaggerate by running your line around the roots rather than the real body, that I place little dependence on the reported and recorded measurements of parties under no obligations to preserve a judicial impartiality. But I believe a fair measurement of the largest trees standing in this grove would make them not less than one hundred feet in circumference, and over thirty in diameter, at a height of six feet from their respective bases, and that several of them have an altitude of more than three hundred feet. I believe the one that was last uprooted measures a little over three hundred.

But these relics of a more bounteous and magnificent world seem destined to speedy extinction. I deem them generally enfeebled by age and the racking and wrenching of their roots by the blasts that sweep through their tops. These malign influences they might withstand for ages, however, were it not for the damage they have already sustained, and are in danger hereafter of sustaining, through the devastating agency of fire. For these glorious evergreen forests, though the ground beneath them is but thinly covered with inflammable matter, are yet subject to be overrun every second or third year by fire. For the earth, to a depth of several feet, even, is dry as an ash-heap, from July to October, and the hills are so steep that fire ascends them with wonderful facility. And thus the Big Trees are scarred, and gouged, and hollowed out at the root and upward, as the effects of successive fires, one of which, originating far southward, ran through this locality so late as last Autumn, burning one of the forest kings so that it has since fallen, half destroying another already prostrate—through the hollow of which two horsemen (not G. P. R. James's, I trust,) were accustomed to ride abreast for a distance of fully one hundred feet—and doing serious damage to very many others. If the village of Mariposa, the County, or the State of California, does not immediately provide for the safety of these trees, I shall deeply deplore their infatuation, and believe that these giants might have been more happily located.

The Big Trees are usually accounted Redwood, but have strong resemblance to the Cedar family, so that my intelligent guide plausibly insisted that they are identical in species with their probable contemporaries, the famous Cedars of Lebanon. The larger Cedars in their vicinity bear a decided resemblance to the smallest of them; and yet there are quite obvious

differences between them. The Cedar's limbs are by far the more numerous, and come far down the trunk ; they are also relatively smaller. The Cedar's bark is the more deeply creased up and down the trunk, while the foliage of the Big Trees is nearer allied to that of certain Pines than to the Cedar's. The bark of the Big Trees is very thick—in some instances, over two feet—and is of a dry, light quality, resembling cork : hence the fatal facility of damage by running fires. The wood of the Big Trees is of a light red color, seeming devoid alike of sap and rosin, and to burn about as freely while the tree lives as a year or more after its death. Unless in the Cedars of Lebanon, I suspect these mammoths of the vegetable world have no counterparts out of California.

They are of course not all of extraordinary size, yet I cannot remember one that would girth so little as twenty feet at a height of two yards from the earth's surface, which is the proper point for horizontal measurement. Hardly one is entirely free from the marks of fire at its root, while several have been burned at least half through, and are so hollowed by fire that a tree eight feet in diameter would probably find ample room in its cavity. And, while many are still hale and thrifty, I did not perceive a single young one coming forward to take the place of the decaying patriarchs. I believe these trees now bear no seed-cone or nut, whatever they may have done in Scipios or in Alexander's time, and that there is no known means of propagating their kind ; and I deeply regret that there is not,—though starting a tree that would come to its maturity in not less than four thousand years would seem rather slow business to the fast age in which it is our fortune to live. Possibly, the Big Trees are a relic of some bygone world—some past geologic period—contemporaries of the gigantic, luxuriant ferns whereof our Mineral Coal is the residuum. I am sure they will be more prized and treasured a thousand years hence than now, should they, by extreme care and caution, be preserved so long, and that thousands will then visit them, over smooth and spacious roads, for every one who now toils over the rugged bridle-path by which I reached them. Meantime, it is a comfort to know that the Vandals who bored down with pump-augers the largest of the Calaveras trees, in order to make their fortunes by exhibiting a section of its bark at the East, have been heavy losers by their villainous speculation.

THE RAMBLE.—*A Fragment.*

BY AN ELDERLY PHILADELPHIAN.

Oft in the stilly night,
Ere slumber's chain has bound me,
Fond memory brings the light
Of other days around me.

Who has not felt the pleasure,—to some temperaments, perchance, a melancholy one,—of calling up from the deep hidden recesses of the mind the memories of happy hours long since numbered with things departed—of people with whom we were in former days familiar, and of places once as accustomed to our steps as our own household porch, but to which our foot-fall is now that of the stranger. They who have been reared in the quiet privacy of the country are perhaps more susceptible to such impressions

than those whose childhood was passed in the throng and bustle of a city, where change is marked on every object, where houses, the landmarks of a former day when "progress" and speculation were less rife, give way to the march of improvement, where block upon block yearly encroaches on the suburbs, where the adventures of to-day pass away unheralded and forgotten, to give place to some new speculator on the morrow, and where even the gilding of the merchant's sign scarce has time to tarnish, ere it yields to that of some fresh commercial aspirant. In the country, on the contrary, though there be indeed too much household change, too little among us of that fine old English feeling which secures to our descendants, or impresses them with the desire to preserve our own paternal acres and our "ancestral trees," still we are not deprived the pleasure of at least recognizing objects with which our eye was once fondly familiar, and to which we again turn as to the face of an old friend from whom we may have been temporarily parted ;—to trees, for instance, under which we once stripped and sung, or

" Inscribed with Friendship's votive rhyme,
The bark now silvered by the touch of Time.

In a humor to conjure up thoughts of the past, with the soft mellow haze of the Indian summer, so peculiar to our climate, pervading the atmosphere, shedding its genial influence on the senses, blending distant objects, and creating a pleasing illusion as the eye wandered over the landscape, making man more at peace within, and all surrounding him, than may at other times a clearer sky and brighter sunshine,—I started alone and on foot to revisit localities with which I had been familiar in the days of my boyhood. A walk of an hour brought me to the Schuylkill, at the point where once floated "the old Gray's ferry bridge," a remnant of the Revolution, and with which the locality has associations connecting it with that period—its history indeed precedes "the days which tried men's souls," and is brought down to those of modern railroads. In place of the old, to me well-known bridge, with its moss, grown logs, rickety rail, and *draw*, through which the lazy shallop was permitted to pass, after sounding its tin horn, the preconceived signal of approach, I found a structure upon piers, with double avenues, one devoted to cars, the other to ordinary travel. Emerging from its western terminus, how changed the scene ! "The cliffs," once the family residence of the Says, perhaps of the naturalist himself, so identified with our Academy of Natural Sciences, was no longer there. The solid granite hill, of commanding height, on which the mansion once stood, overlooking the distant city and the Schuylkill in its meandering course, had disappeared—levelled by the hand of "progress," which consigns to a common fate the noblest tree or venerated structure. The antique ferry-house,—the scene of so much festivity and joyous mirth in days *lang syne*, where in its season the tinkling sleigh-bell kept tune to the merry laugh, or where at other times the sober follower of Izaak Walton regaled himself after his lengthened walk, where *Martin* ministered planked shad or *Oliver* concocted punch as best suited the taste of their "parishioners"—remained. The steps to the adjacent garden, hewn out of the solid rocks, trodden by so many a Philadelphian in his youthful days, when locks now grey were golden, like their visions of the future, when

" Fancy flutter'd on her wildest wing,"

and exciting astonishment scarcely less than that which Petre may have

inspired in their maturer years,—still stood,—worn and riven by many a winter's storm, monuments of the day when our city's utmost bound was scarcely a tithe of its present extent, and drab-coated Pennsylvania had no cause to blush that her interests and her honor were sacrificed at the shrine of politicians. The garden, or rather the grounds, with indistinct outlines of avenues and sinuous paths were still there, but many a tree, under which I had once gamboled, had disappeared,—had yielded to the axe, perhaps some to time, enough remained to bring back fresh as yesterday, days gone by, and Rogers' sweet lines gave expression to my thoughts and feelings :

“ As thro' the garden's desert paths I rove,
What fond illusions swarm in every grove !
Childhood's loved group revisits every scene,
The tangled wood-walk and the tufted green. ”

Proceeding onward, I reached the “ Battery ” whose earthen walls were designed to curb the inroads of the British in the war of 1812. The lapse of time since then is indicated by the growth upon the artificial mound,—thrown up in part by school-boy hands, in patriotic fervor.—How many of those who participated in the work are now stilled by death, or tremulous by age !

At a short distance southward from this point stands the “ Sorrel Horse,” a noted stopping place when the “ swift mail ” coach accomplished the trip between Philadelphia and Baltimore in something less than two whole days.

Immediately opposite this hostelry, still stands, as it has stood for half a century or more, bleaching in the summer's sun, a plain one-storied structure, where Alexander Wilson, the ornithologist, once was the presiding genius, the pedagogue of the Hamlet school, and doubtless the wonder of the unlettered throng,

“ That one small head could carry all he knew. ”

Uninteresting in itself as is the hut, for it is little else, what reflections it induces. The bell is now mute, and

“ Unheard the shout that rent the noontide air,
When the slow dial gave a pause to care, ”

but around the spot cluster associations which must ever be held sacred by all who cherish the love of nature. Here the simple-minded man probably conceived and planned the work which will hand down his name to the remotest generations. From this spot we can imagine him departing on many a tramp of observation, returning with specimens of birds, and knowledge to be recorded of their haunts and habits. Within these rude walls he probably indited the glowing descriptions of the objects he so much loved. His happy style and expressive diction adding charms to a charming subject, and giving impulse to the study of a science to which he was devoted, heart and soul, whilst his diligence was such that years afterwards, when Charles Bonaparte published his supplementary volume, he had not been able to discover, in Pennsylvania, a single bird undescribed by Wilson. I lingered around the spot sacred to science, conjuring up fantasies of the past, and revelling in imagination on other days. Here he who had been in his youth a humble Paisley weaver first felt the love of nature, and burning within his breast the fire of genius, which was one day to burst forth and leave its impress on the age—for so long as the admiration of nature's works shall be an impulse of humanity, so long shall his memory be held in

affectionate esteem. How soothing in this utilitarian age, when effort is too often measured by the wealth which it produces, and the glitter of gold blinds the perception of modest merit, to steal away into the quiet country, and give full scope to natural affections—to do homage to genius, and silently pay our tribute of respect to those whose works contribute to present pleasure, and that of generations yet unborn. Whilst living, he was fond in his intimacy with the Bartram family, from whom he no doubt derived encouragement and useful information, and afterward when he had removed to the city, and adopted literature as a profession, he was for several successive summers resident at their delightful homestead.

Wilson, with the impulsive love of nature which so thoroughly imbued him, had expressed a wish to be buried at the Bartram garden, under the umbrageous foliage of familiar trees, and, in his own words, "where the birds might sing over his grave," but he was debarred the wish. He died in Philadelphia in 1813 whilst the then proprietor of the grounds was with the army on the Canadian frontier; he found his last resting-place at the "Old Swedes Church," near the navy-yard. Peace to his ashes.

The declining day admonished me I had a walk ahead, and so absorbed had I been by the reflections I have attempted to express, I was almost unconscious of the gorgeous beauty of the surrounding landscape, burnished by the oblique rays of the setting sun. The early frost had done its work: each leaf was tinged as in a fairy scene; some, as the ash, the hickory, and the birch, were of a golden hue; others, as the oak, the scarlet maple and the gum, were of varied tints of lighter or deeper purple, the whole forming a glowing gallery not to be witnessed, of equal beauty, elsewhere than on our continent. Such a sight, with its associations, was worth a life spent in the bustling haunts of trade, and when I reached my home I trust I was wiser and better than when I started on my solitary ramble. L.

YUCCA FLEXILIS.

THE *Yucca flexilis*, *Nobis*; *Y. stenophylla*, *Y. acuminata*, *Y. angustifolia*, *Y. longifolia*, of the gardens, is an herbaceous plant mostly with a short stem, and leaves of twenty-two inches, sometimes twenty-five inches in length and from an inch to one inch and one-fourth across, of a deep, bright green color, shining almost as though varnished. They are rarely glaucous, except the young leaves, which gracefully turn back in the middle, and are traced in the upper two-thirds of the leaf by five ribs, edged with a reddish brown color. The flowers always grow singly and drooping, as shown in the figure.

This species, the most elegant in its bearing, is also very remarkable for the size of its flowers; indeed, when open, they measure sixteen inches in diameter. It is distinguished from the others by the deep green color that lights its leaves. There is, too, a character of variability in the number of its stamens, which we never met with before in any other; instead of six, the original number, there often happens to be eight, and even ten. As to the specific name of *stenophylla* (straight-leaved,) which some horticulturists have given it, we consider it altogether wrong, because it is worthless, and occasions confusion much to be regretted; indeed, in several other plants the leaves are much straighter; and, moreover, this name is applied

to several varieties or species, whose bearing and nature is very different. The name of *flexilis* seems to us much more convenient since it indicates



THE FLOWER OF YUCCA FLEXILIS, OF NATURAL SIZE.

both the general bearing of the plant and the reflected character of the leaves, at the same time expressing slightness ; besides, it occasions no

confusion with *reflexa*, and *recurva*, other species with leaves also pendent, but larger and more glaucous, a character rarely met with in the plant we describe.

The *Yucca flexilis* is still rare, for it produces few buds, which are the only means of multiplying it. It happens sometimes that this species, as well as the *Y. gloriosa*, expands its flowers late in the fall, and consequently they are often destroyed by autumn frosts.—*Revue Horticole*.

POETS AS GARDENERS.

Most poets have a painter's eye for the disposition of forms and colors. Kent's practice as a painter no doubt helped to make him what he was as a landscape-gardener. When an architect was consulted about laying out the grounds at Blenheim, he replied "You must send for a landscape-painter:" he might have added—"or a poet." Our late Laureate, William Wordsworth, exhibited great taste in his small garden at Rydal Mount. He said of himself—very truly, though not very modestly, perhaps,—but modesty was never Wordsworth's weakness—that Nature seemed to have fitted him for three callings—that of the poet, the critic on works of art, and the landscape-gardener. The poet's nest (Mrs. Hemans calls it "a lovely cottage-like building") is almost hidden in a rich profusion of Roses, and Ivy, and Jessamine, and Virginia Creeper. Wordsworth, though he passionately admired the shapes and hues of flowers, knew nothing of their fragrance. In this respect knowledge at one entrance was quite shut out. He had possessed at no time of his life the sense of smell. To make up for this deficiency, he is said (by De Quincy) to have had "a peculiar depth of organic sensibility of form and color." Mr. Justice Coleridge tells us that Wordsworth dealt with shrubs, flower-beds and lawns with the readiness of a practised landscape-gardener, and that it was curious to observe how he had imparted a portion of his taste to his servant, James Dixon. In fact, honest James regarded himself as a sort of *arbiter elegantiarum*. The master and his servant often discussed together a question of taste. Wordsworth communicated to Mr. Justice Coleridge how "he and James" were once "in a puzzle" about certain discolored spots upon the lawn. "Cover them with soap-lees," said the master. "That will make the green there darker than the rest," said the gardener. "Then we must cover the whole." "That will not do," objects the gardener, "with reference to the little lawn to which you pass from this." "Cover that," said the poet. "You will then," replied the gardener, "have an unpleasant contrast with the foliage surrounding it." Mrs. Hemans once took up her abode for some weeks with Wordsworth at Rydal Mount, and was so charmed with the country around, that she was induced to take a cottage called *Dove's Nest*, which overlooked the lake of Windermere. But tourists and idlers so haunted her retreat, and so worried her for autographs and album contributions, that she was obliged to make her escape. Her little cottage and garden in the village of Wavertree, near Liverpool, seem to have met the fate which has befallen so many of the residences of the poets. "Mrs. Hemans's little flower-garden" (says a late visitor) "was no more—but rank grass and weeds sprang up luxuriously; many of the windows were broken; the entrance-gate was off its

hinges : the Vine in front of the house trailed along the ground, and a board, with '*This house to let*' upon it, was nailed on the door. I entered the deserted garden and looked into the little parlor, once so full of taste and elegance ; it was gloomy and cheerless. The paper was spotted with damp, and spiders had built their webs in the corner. As I mused on the uncertainty of human life, I exclaimed with the eloquent Burke,—'What shadows we are, and what shadows we pursue !' " Pope too had communicated to his gardener at Twickenham some of his own taste. The man, long after his master's death, in reference to the training of the branches of plants, used to talk of their being made to hang "*something poetical*." All true poets delight in gardens. The truest that ever lived spent his latter days at New Place, in Stratford-upon-Avon. He had a spacious and beautiful garden. Charles Knight tells us that "the Avon washed its banks ; and within its enclosures it had its sunny terraces and green lawns, its pleached alleys and Honeysuckle bowers." In this garden Shakspeare planted with his own hands his celebrated Mulberry tree. It was a noble specimen of the black Mulberry, introduced into England in 1548. In 1605 James I issued a royal edict recommending the cultivation of silkworms, and offering packets of Mulberry seeds to those amongst his subjects who were willing to sow them. Shakspeare's tree was planted in 1609.—(*Flowers and Flower Gardens*, by Richardson.)

THE STEM, BRANCHES, AND ROOTS.

EVERY member of the vegetable form, from the minutest root to the most fragile spray, has its epidermis, cellular integument, bark, woody fibre, and medullary matter; these are most apparent in the stem and branches.

The first of these, the *epidermis*, is analogous to the human cuticle, or scarf skin, being the external envelope of the whole surface. It is commonly transparent and smooth, sometimes hairy; in other instances hard and rugged, occasionally so abounding with silica, or flint, as to be employed as a polisher for wood, and even brass. In every instance it is a network of fibres, the meshes of which are filled with a fine membrane. The epidermis appears to be designed as a preservative from the injurious effects of the atmosphere, to regulate the quantity of gaseous matter and moisture respired, and as a shield from the attacks of animals, &c. It is certainly devoid of sensation. The texture of the membrane between the meshes varies much in different species of plants. In very succulent plants it is so contrived that it readily allows the absorption of moisture, but prevents perspiration. Such plants are, consequently, well qualified to inhabit hot climates and dry soils. Neither is it at all impossible that it possesses the quality of allowing the passage of some gases, and rejecting others, as the bladder of animals permits water to pass through its texture, but is impervious to alcohol. In old trees it cracks, and in many cases becomes obliterated, the dead layers of bark performing its offices. Its growth is slower than that of other parts, and its powers of expansion, though great, occasionally cannot equal the rapid enlargement of the parts it encloses and defends. This is very frequently the case with the stem and branches of the Cherry; the tree is then said by gardeners to be hide-

bound, and is relieved by making longitudinal incisions. It is still more apparent in the fruit of the Cherry and Plum: when rain falls abundantly during their state of ripeness, their pulp swells so rapidly, that in an hour or two the epidermis of every ripe drupe upon a tree will be cracked.

Gardeners are very prone to scrape with no gentle hand the bark of their fruit trees; whereas every care should be taken not to wound its surface unnecessarily, and never to reduce its thickness until all danger of severe frosts is passed.

The epidermis regulates the evaporation from a plant, and preserves it in some degree from the detrimental sudden changes of temperature. The Birch (*Betulus alba*), has more films of epidermis than any other European tree; and it ascends to greater heights in the Alps, and approaches nearer to the frozen zone than other trees of the same climates.

It is quite certain that stems and branches can imbibe nourishment through their epidermis. If a branch be cut off, and a wetted towel be wrapped round the bark, yet without touching either the cut end or the leaves, that branch will retain its foliage verdant much longer than another branch similarly cut off, but not enfolded by a wetted towel. So all gardeners know, that enclosing the stems of newly-transplanted large trees with moss or hay-bands, and keeping these moist, is an efficient mode of enabling them to bear the removal. A branch, or a whole tree, may be killed by painting over its entire epidermis with gas tar,—showing either that the admission and emission of gases and moisture being prevented, or that creosote or other poisonous matter is absorbed from the tar, death is the consequence.

We could give many similar results of experience, but will only add further that Mr. Hales states, as the result of many experiments, “that the air enters very slowly at the bark of young shoots and branches, but much more freely through old bark; and in different kinds of trees it has very different degrees of more or less free entrance.”—(*Vegetable Statics*, i., 160.)

Knowing these facts, and knowing also the benefit a tree derives from keeping its epidermis freed from lichens, we have never doubted that its clean and healthy state is of as much importance to a plant as is a clean and healthy skin to an animal.

The roots exercise a kind of discriminating power in admitting to the circulation of the plant the various substances which are present in the soil. The vessels of the stem exhibit an analogous power of admitting or rejecting the solutions of different substances into which they may be immersed. Thus Boucherie states that, when the trunks of several trees of the same species are cut off above the roots, and the lower extremities are immediately plunged into solutions of different substances,—some of these solutions will quickly ascend into, and penetrate the entire substance of, the tree immersed in them, while others will not be admitted at all, or with extreme slowness only, by the vessels of the stems to which they are respectively presented. On the other hand, that which is rejected by one species of tree will be readily admitted by another. Whether this partial stoppage of certain substances, or total refusal to admit them, is a mere *contractile* effort on the part of the vessels, or is the result of a chemical change of the substance itself, or of the fibre or sap with which it comes into contact, by which change their exclusion is effected or resisted, does

not as yet clearly appear. That it does not depend upon the lightness and porosity of the wood, as might be supposed, is shown by the observation that the Poplar is less easily penetrated in this way than the Beech, and the Willow than the Pear-tree, the Maple, or the Plane.—*Johnston's Lectures on Agricultural Chemistry.*

Functions of the Leaves.—The functions of the leaves appear to be a combination of those of the lungs and stomach of animals; they not only modify the food brought to them from the roots, so as to fit it for increasing the size of the parent plant, but they also absorb nourishment from the atmosphere. The sap, after elaboration in these organs, differs in every plant, though, as far as experiments have been tried, it appears to be nearly the same in all vegetables when it first arrives to them. The power of a leaf to generate sap is in proportion to its area of surface, exposure to the light, and congenial situation.

Leaves throw off a very considerable quantity of water. Dr. Hales found that a Cabbage emitted daily nearly half its weight of moisture, a Sunflower, three feet high, perspired 1 lb. 14 oz., and Spearmint exhales $1\frac{1}{4}$ times its weight in the same period. But of all the plants the diurnal perspiration of which has been ascertained, the Cornelian Cherry (*Cornus mascula*) transpires the most; the exhalation amounting to nearly twice the weight of the plant in twenty-four hours. This aqueous expiration takes place chiefly during the day, is much promoted by heat and checked by rain, or a reduction of temperature.

Evergreens transpire less moisture than deciduous plants; which would lead to the expectation that they are more capable of living in dry situations, which, in general, is really the case.

As the season of growth advances the transpiring power of leaves decreases. Under similar circumstances Sennebier found the transpiration much greater in May than in September.

The transpiration of plants decreases with that of the temperature to which they are exposed, as well as with the period of their growth. This explains why the gardener finds that his plants do not require so much water in cold weather, nor during the time that elapses between the fall of their blossom and the ripening of their seed. During this period they do not transpire more than one-half so much as during the period preceding and attending upon their blooming.

The transpiration takes place from the upper surfaces of the leaves; and, if these surfaces are coated with varnish, the leaves gradually decay and fall, and the growth of the plant ceases until fresh leaves are produced. Hence arises the benefit which plants derive in rooms, greenhouses, and other confined enclosures, from keeping those surfaces cleansed with the sponge and syringe. Some plants are particularly sensitive to injury from any check to their transpiration, among which are the Tea-scented Roses. The advantage derived by plants from having their leaves cleansed was exemplified by the following experiment:—

Two Orange-trees, weighing respectively 18 ozs. and 20 ozs., were allowed to vegetate without their leaves being cleansed for a whole twelvemonth; and two others, weighing 19 ozs. and $20\frac{1}{2}$ ozs. each, had their leaves sponged with tepid water once a week: the two first increased in weight less than half an ounce each; whilst of the two latter, one had

increased two, and the other nearly three ounces. In all other respects they had been treated similarly.

It must be remembered, however, in using the sponge and the syringe, that the under side of the leaves is an absorbing surface, benefited by being kept clean, and by the application of moisture. The Kidney Bean, Sunflower, Cabbage, and Spinach, absorb moisture equally by their under and upper surfaces; the Cockscomb, Purple-leaved Amaranth, Heliotrope, Lilac, and Balm, absorb most freely by their upper surfaces; and the Vine, Pear, Cherry, Apricot, Walnut, Mulberry, and Rose, absorb most by their under surfaces.—*The Science of Gardening*.

A COVERED HEDGEWAY.

WE alluded last month to a book entitled "The Gardens of England," containing most superb views of the best kept and most ornamented pleasure grounds in that land of beauty. In one of the plates of Elvaston Castle occurs a picture which embraces a view of a garden called *Mon Plaisir*, fenced round with a double hedge, as in the cut; it takes the form, perhaps purposely, of an irregular *mole track*, and is composed of two lines of evergreen plants—most probably Yew or American Arbor Vitæ, for either would answer. These meet at the top, forming a covered walk, with windows cut here and there to admit light or to embrace a view, at the same time that the rays of the sun are excluded. Such a walk would be of easy execution, the trimming of the plants so as to meet at the top would be an easy matter with a very few years' attention provided the rows were not placed too far apart; this could be done with almost any hedge plant, either deciduous or evergreen.

PAPER ON GRAPES,

READ BEFORE THE "AIKEN (S. C.) VINE-GROWING AND HORTICULTURAL ASSOCIATION," SEPTEMBER 15TH, 1859, BY H. W. RAVENEL, ESQ.

THE Grape, like all other domesticated plants long subjected to cultivation, has formed innumerable varieties, differing: First in *size, flavor, color, and time of ripening its fruit*. Second, in *shape and size of leaf*. Third, in general thriftiness and vigor of *growth*. These variations are, however, confined within certain limits; and, through all their varieties, they yet preserve their specific identity, and reveal their parentage and origin.

There are certain bounds within which nature seems to revel in producing changes and combinations of various forms and qualities, but these bounds are never over-stepped.

Species in nature are primordial forms whose characters remain constant through all time, and which are capable of propagating their kind. Within the limits of these specific characters there may be variations in minor points, occurring sometimes in the wild state, but oftener through the effects of the high culture and artificial treatment. Thus, in the United States, we have a certain number of species of wild Grape. According to the best authori-



A COVERED HEDGEWAY

ties, the number is reduced to *four*, east of the Mississippi. From one or other of these four species are descended *all* our indigenous varieties. Of these there are now upwards of one hundred in cultivation in the United States, and their number will go on increasing as seedlings of good qualities are brought into notice. Many of them, no doubt, will prove valuable acquisitions, either for the table or wine-making, but a large number will be thrown aside. There is such a strong temptation to multiply varieties, either as a source of profit to sellers of wine, or as matter of pride to amateur cultivators, that the only corrective for the evil will be a publication, at stated periods, of a list of condemned varieties, as is now done by the United States Pomological Society in the matter of fruit-trees.

I am not aware of any attempt to classify these indigenous varieties and trace them to their proper parentage,—to one of the four native species; nor, perhaps, has the time arrived yet when it can properly be done, from the want of general dissemination, and the difficulty of obtaining many of the latest varieties.

I will, however, give an enumeration of our four American species, with the varieties of each, so far as our present information permits.

NATIVE, OR INDIGENOUS GRAPES.

1ST. *VITIS LABRUSCA*; LINNÆUS.—*Mx.*—*Ph.*—*Ell. sk.*—*Torr. & Gr.*—*De Cand. Prod.*

Fox Grapes.—Stem of a pale-brown color, the bark more readily exfoliating than in the other species; and the internodes, or joints, rather longer. Leaves large, 3 to 5-lobed, dark-green above; densely tomentose or woolly beneath; the tomentum whitish or rusty. Bunches not very compact nor shouldered. Berries large, dark blue, with a thickish skin, and always pulpy, with a musky flavor. From this species are descended the following cultivated varieties, viz.:

Isabella or Laspeyue, Mary Isabel, Catawba, Bland's Madeira, Concord, Diana, Rebecca, To Kalon, Anna, Hartford Prolific, Ontario, Catawissa, Northern Muscadine, Minor or Venango, Garrigues, Stetson's Seedling, York Madeira or Canby's August, Hyde's Eliza, Union Village, Early Chocolate, Early Black, Harvard, Green Prolific, Kilvington, Ives, Charter Oak, Schuylkill or Alexander, Shaker, Sweet Water or Early Muscadine.

2D. *VITIS ÆSTIVALIS*; MICHAUX.—*Ph.*—*Ell. sk.*—*Torr. & Gr.*—

De Cand. Prod.

Summer Grape.—Stem stout, and of a reddish-brown, with the internodes generally shorter than in the preceding. Leaves broadly cordate, 3 to 5-lobed, or sinuately palmate; when young, downy, with cobwebby hairs beneath; smoothish when old; of a lighter green than the preceding. Bunches shouldered and compact. Berries small, round, black, rather acid, never pulpy. From this species are descended the following:

Warren (Herbement), Pauline or Burgundy, Guignard, Clinton, Delaware, Lenoir, (*Black July*, *Lincoln*, *Thurmond*, *Sumter*, *Devereux*,) Marion, Travelling, Long Grape or Old House, Elsinboro, Seabrook, King, Ohio or Cigar Box, Missouri, Norton's Virginia.

3D. *VITIS CORDIFOLIA* ; MICHAUX.—*Ph.—Torr. & Gr.—De Cand. Prod.*

Winter or Frost Grape.—Leaves thin, smaller than the preceding, glabrous on both sides, with broad mucronate teeth. Berries small, nearly black, ripening late and very tart. There are no varieties of this in cultivation, that I am aware of.

4TH. *VITIS VULPINA* ; LINN.—*V. rotundifolia* Mx.—*Ph.—Ell. sk.*

Bullace, Bullet or Bull grape—known in Florida and Texas as “Mustang.”

Stem whitish, the wood more compact and close-grained than in the other species. Leaves cordate, shining on both surfaces, somewhat 3-lobed, coarsely toothed, smaller than any of the other species. Berries in loose clusters, scarcely exceeding five or six, changing from reddish brown to black in ripening, with a thick skin and large pulp.

The only cultivated variety is the “Scuppernong,” so called after a lake in eastern North Carolina, where it was first discovered. There may be more than one variety in cultivation under this name, as the so-called “Scuppernong” has been found in other native localities since.

The *Vitis rupestris* ; Scheele, is found in Texas, about the Upper Gaudaloupe, near New Braunfels, and is there known as the “Mountain Grape.” It is said to have been found also in Arkansas. Prof. Gray, in his description of the plants of Texas, found by Lindheimer, in 184–, says, of this species : “It does not climb, but the stems are upright, and only two or three feet high. The branches are small, and the berries, of the size of peas only, are black, very sweet, and the most grateful as well as the earliest ripened grape of Texas.”

The following comprise a list of native cultivated grapes, which I know only by name, not having had access to any means of information by which they may be classified. They are all, most probably, descendants of *V. Labrusca*, or *V. Æstivalis*, and some may be synonyms of those already enumerated ;

Norton’s Seedling, Logan, Rock-house Indian or Waterloo, Little Ozark, Graham, Miller’s Seedling, Burton’s, Early August, Sage, Early Amber, Clermont, Jane, Harris, Long, Baldwin’s Early, Louisa, Mary Ann, Clapier, Canada-Chief, Secord’s Sweet-Water, Golden Clinton, Senior, Archer, Monteith, Huber.

These are names of grapes taken from various sources, and mentioned as native or indigenous seedlings. After being better known, and with full opportunities for examination of their fruit, leaves and habit, doubtless we shall be able to classify them, and trace their parentage to one or other of the four American species.

How far the effects of high culture, and the propagation of new seedlings from these improved varieties, may cause them to deviate from their typical state, it is impossible to foresee : but if our botanists are correct in their limitation of species, these variations must be within the specific characters assigned to species respectively.

There is one prominent character which distinguishes the Grapes of the United States from those of the Eastern Hemisphere, and that is in the *Inflorescence*. All the species of American grapes are *diæcio polygamous*, that is, some of the vines bear staminate or barren flowers only, and are forever sterile. Others bear perfect flowers, and are fruitful.

All the species of the Eastern Hemisphere are *Hermaphrodite*,—that is, every vine bears perfect flowers, containing stamens and pistils, in the same corolla, and are fruitful. In the absence of other evidence, this fact would be conclusive of the parentage of an unknown seedling, whether it be of exotic or indigenous origin.

FOREIGN GRAPE.

Of the vast number of varieties of the foreign Grapes now in cultivation in Europe and the United States, all are referred to the single species, *Vitis vinifera*, of *Linnaeus*, a native of the southern parts of Asia.

It has been under cultivation more than a thousand years, and was known under many varieties by the ancients.

Upwards of thirty years ago, when Chaptal was Minister of the Interior, there were fourteen hundred varieties enumerated in the Luxembourg catalogue, obtained from France alone. The Geneva catalogue numbered six hundred. Doubtless they have been much increased since; and as in the propagation of varieties of other fruits by seedlings, there is no limit to the number that may be brought into existence.

DeCandolle, in his "Prodromus," enumerates and gives descriptions of eleven other species of *vine* from the Old World, mostly natives of the southeastern part of Asia, but none of these have been cultivated extensively. The Grape of Europe is *one species*, but of *numberless varieties*.

Most of the early attempts at Grape culture in this country were with the foreign Grapes, but all, without exception, have been failures. The foreign Grapes (varieties of *Vitis vinifera*) seem, from their constitution, unfitted to our soil and climate. (I here allude to open air culture—under glass they appear to thrive very well.) How they will succeed when grafted upon the hardy native vine, remains to be proved. Partial experiments made in Florida and in this vicinity, are promising of success.

If the cause of failure is the greater humidity of our climate, grafting on the wild vine will scarcely prove a corrective, as the leaf and fruit are still exposed to the atmospheric influence. If the cause proceeds from uncongeniality of soil, then grafting upon the wild stock will most probably be successful. As this mode of increasing a vineyard for wine-making must necessarily be more tedious and expensive than by cuttings, it is our policy, as well as true philosophy, to endeavor, by the raising of seedlings, to obtain varieties best suited to our soil and climate.

Every encouragement should be given for the accomplishment of this end, and our Association has consulted the true interest of all vine-growers in offering handsome premiums towards that object.—*Farmer and Planter*.



THE TRIGUERA AMBROSIACA.

THE *Triguera ambrosiaca* is an annual plant, with a slender, smooth stem, presenting four angles, two more striking than the others. Its alternate leaves, regularly oval and jagged, recall those of the *Planera crenata*; the corolla is monopetalous, of a deep violet color, contrasting very prettily with the almost black hue of its tube-shaped base.

The peculiarity of the growth of the leaves is shown in the plate. The flowers close in the evening, not to open till 8 o'clock in the morning.

This plant is sensitive to cold, and the seeds should not be sown till there is no danger of frost. A light and substantial soil suits it the best. It should be exposed to the free air and sun. To have it in all its beauty, the *Triguera ambrosiaca* should be cultivated like the *Schizanthus*; sow the seeds in the autumn, and place the plants in the pots you propose keeping them in through the winter, and under frames, taking the precaution to give them as much air as possible. If you wish to hasten the flowering without sowing so early as autumn, January or February will do to plant the seeds.

The species before us is valuable for the color of its flowers, which succeed each other a long time.

The Trigueras come from the Mediterranean region, also from the neighborhood of Cordova.

Three species only have been described,—the one before us, the *T. inodora*, and the *T. baccata*.



THE TRIGUERA AMBROSIACA.

STRAWBERRIES.*

THE plate presented in this number represents several strawberries, a portion of which have been much talked of, and others are but just beginning to have their claims canvassed, and it will be the duty of this journal still further to discuss them. Though we cannot say all that is desirable respecting some of them now, we can vouch for their accuracy in every respect, the drawings and colored copy from which they have been produced being made by an accomplished lady, Miss Margaretta H. Morris, from nature. The same may be said respecting our previous strawberry plate, which in all particulars was accurate. These representations serve a good purpose for reference. In the index to this number may be found references to some now figured.

FIG. 1. *Black Pine*, properly Read's Black Pine, is declared to be very productive, often larger than the one represented, and quality excellent. Not yet sufficiently proved. Large, short conical, nearly black; seeds yellow and slightly imbedded. Flesh firm, of excellent flavor, and late in ripening. This and Read's No. 1, originated by Wm. H. Read, Canada West. "The size is an average one," says a gentleman who has cultivated it; "more prolific than Hovey's, with a retention of more vigor during the ripening season, so that it can mature its whole crop fully. In flavor I consider it inferior to Hovey's, though it is sweeter, and has a peculiar musky taste, which is agreeable to most persons. All considered, with its dark color and glossy appearance, it is a very fine sort, and well deserving of cultivation."

FIG. 2. *Huey's No. 1*.—For handsome appearance in color and form, together with fair and uniform size, as well as being one of the most prolific of its dimensions, this will claim a place among the fine sorts, though in flavor it will not be considered "very first;" lacking a little in vigor when ripening, the last of the crop is not as full flavored as the first.

FIG. 3. *Alice Maud*.—Plant strong and vigorous, fruit rather large, conical, dark color, glossy scarlet; juicy, rich, and excellent; early. Staminate. Much has been said about its success in Washington; elsewhere some doubts have been expressed. Some are trying it a second time, and we shall have further reports. With plenty of space and extra culture, it will, no doubt, yield well.

FIG. 4. *Honneur de Belgic* is one of the best strawberries received from Belgium, but like No. 6, requires proving. Although of fine size, and handsome appearance, it is not prolific, and is variable in flavor, some berries being very good, others rather insipid, but like many foreign varieties, might do better under high cultivation.

FIG. 5. *Marilandica* is the great berry we have all heard so much about, raised by the late Dr. Edmondson of Baltimore. He cultivated it well, and generally took the prizes, either with this, the Charles's Favorite, or the Haarlem Orange. We have not heard of equal success in other quarters, and our own experience is not over favorable. The flavor, when in perfection, is surpassingly good. It must be remembered that soil and location in our climate is of vast importance in selecting varieties. That *Marilandica* has done well in Baltimore none can gainsay, and that perhaps is its

* See Frontispiece.

proper locality ; it has hardly been out long enough to be *fully* tested elsewhere.

FIG. 6. *Triomphe de Gand* has been extremely fine in several places this past year. Before being generally adopted, they should be grown in a dry season, to fully verify it and the Trollopes Victoria. European kinds in many places are subject to "go blind," as it is termed, without plenty of moisture. Probably not so good for general cultivation as some of our natives.

FIG. 7. *Brighton Pine* was raised by Mr. Scott of Brighton, Mass., who also raised Scott's Seedling. It is a very fair sort of fruit, bears well, is good, but not among the very best, being of fair size and flavor, though not superior in either ; rather prolific, with some want of vigor during ripening, so as to disturb the latter part of the crop. "Would admit it," says a valued correspondent, "in a large collection, but not in a list of ten varieties, on its first test this season."

FIG. 8. *Athlete* is a very large, fine berry, destined to be popular. Its history is somewhat obscure, but will be made clear soon. We found a bed of it near Germantown, Pa., much valued by the owner. He had received it from Easton, Pa., from Mr. Seitz, who supposed it to be a seedling which came from a Mr. Watson. Its superior appearance induced us to have its portrait taken, and here our information about it ends for the present.

FIG. 9. *Downer's Prolific Seedling*.—We requested Mr. Downer to furnish a drawing of this berry, which he says was taken after the first were picked. Our Kentucky friends have spoken loudly of this fruit in their recommendations. We can only say that, not having seen or tasted it, we are obliged to wait and see if it suits the climate of the seaboard.

FIG. 10. *Rival Hudson* was raised by Mr. Burr, at Columbus, about fifteen years ago, and is cultivated by many for its prolific quality, and because it is valued for preserving. Very hardy, and has already been described. Pistillate.

SPRING-FLOWERING BULBS FOR A RHODODENDRON-BED.—"Are there any spring-flowering dwarf bulbs that would do well planted as an edging to a Rhododendron-bed which is entirely of sandy peat? If so, could you give me a list of say twelve sorts, and also say how deep they ought to be planted? Would the Scilla tribe, Crocus, and Snowdrop answer?"—PAUL RICAUT, in *Gardener's Chronicle*.

[Every one of the spring bulbs will bloom and grow, ripen, go to rest, start again and again in blooming vigor in Rhododendron-beds, whether they be in boggy, spongy peat, in sandy peat, or in sheer yellow loam. One might think there is something in Rhododendrons which of itself causes all hardy bulbs to do better with them than when grown any other way. All the Lilies which will grow out of doors will do so all the better in Rhododendron beds. All Gladioluses the same. All dwarf Tulips, Crocuses, Scillas, Snowdrops, and every one of the low dwarf Narcissuses. But there is one rule to be observed in planting any or all of these in an American bed, and that is, to have every one of the bulbs twice as deep as they ought to be in loam. The Snowdrops and the Crocuses to be exactly two inches deep; Scillas and Dog's-tooth Violets one inch and a half; Early Tulips and Hyacinths, Lilies and Gladioluses, fully three inches; and the measurement is from the surface to the top of the bulbs after the soil is settled with rain. The soil under them, and all round them, must be dug, and kept from the roots of the Rhododendrons at all times and seasons. Rotten leaves, and the *fresh* parings of grass sides and verges in the spring make the best compost for Lilies and Gladioluses to help them on in these Rhododendron-beds—one spadeful at the bottom of a good hole for a large patch of five, seven, or eleven bulbs.]

WOOD CARVING.

THE art of carving in wood is one that arrived at great perfection in centuries gone by, and is now revived. Grinling Gibbons is the most celebrated English name in this department of the arts; Walpole said of him that "he gave to wood the loose and airy lightness of flowers, and



chained together the various productions of the elements with a free disorder, natural to each species." W. G. Rogers, of London, is now the most esteemed wood-carver, and we present above two specimens of his work that have been brought to this country as an example of what can be done in this apparently difficult material.

HOW TO GROW LILLIPUTIAN PLANTS.

From the Journal de la Société Impériale et Centrale d'Horticulture.

CHINESE gardeners are famed for the skill with which they reduce plants which are naturally of some considerable size, and even large forest trees, to the very smallest dimensions. Dwarf plants are in great demand all over the Celestial Empire, and are generally very expensive. The custom of keeping in sitting-rooms little stages ornamented with different things, and even with living plants, induced the gardeners of Europe to imitate the Chinese gardeners, although at a great distance, and to raise plants in tiny pots, generally choosing succulents, of which it is easy enough to obtain very small specimens. As experiments in this mode of cultivation increased, different kinds of plants were taken, and in Germany they at last succeeded in reducing hard-wooded plants and even forest trees themselves to a dwarf state. Thus, this art of the Chinese gardeners is transferred to Europe, and though the result is of no great importance, yet in a general horticultural point of view it is very curious.

The first gardener in Germany who cultivated Lilliputian plants—that is to say, plants with all their parts reduced to the smallest dimensions, was M. Boekel, from whose account we borrow the description of the method by which he attained this curious result. As examples of what he produced, he mentions a plant of Ivy, with 22 leaves, which, together with its pot, might be covered by a large leaf of common Ivy; also an oak (*Quercus robur*) 13 inches high, whose head formed a ball 6 inches in diameter. The details of his mode of operation are as follows :—

He had pots made of a very porous clay, the proper material for which was obtained by mixing equal portions of the clay used in making red and white pots, and adding 4 per cent. of ashes and 1 per cent. of sulphur. For woody plants, such as Oaks or others, the pots are very shallow, from about 2 to 2½ inches high and 6 to 6½ wide; for other plants he used pots from 1 to 2 inches high and broad. These pots he filled with soil or earthy mixtures such as are used in common cultivation; only he adds a third part of very small flinty gravel. The pots are filled up to the brim, and watered from below, by placing them in a dish containing water, or in a tin vessel made expressly for that purpose, with a tap, by means of which the water that is not absorbed is drawn off.

In order to make dwarfs of such plants as Oaks, Elms, &c., it is best to take one-year seedlings. In the spring their ends should be pinched off to make them form laterals; then when these have grown about 2 inches long, they are to be served in the same way, and the ends of all those which come afterwards are continually pinched off; the plants are then put into a cool place to prevent their shoots becoming too much drawn up; otherwise, in general, they like a sunny situation best. From herbaceous plants cuttings are taken and treated in the same manner. Climbing plants cannot be thus cultivated. To all plants which can bear this sort of treatment liquid manure should be given every three or four weeks; but care must be taken in administering this powerful stimulant, otherwise you may kill your plants.

PRUNING GRAPES.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

IN an article headed "Sundries," in the November number of the *Horticulturist*, the writer, in some remarks upon my late article on Graperies and Grape-growing, concludes with the following paragraph :

"I don't quite approve of Mr. Saunders' plan of renewing the whole plant annually, which appears to be rather severe treatment, and must, I should think, eventually enfeeble the plant to an injurious extent."

In reply to this I beg to ask where I have ever recommended this treatment? To cut down the plant annually would, of course, be an unprofitable proceeding with the grape-vine, not that it would kill the plant, but where would the fruit come from? I ventured to recommend a system which I *know* to be valuable, and which I have no doubt will ultimately become popular, as it is already practised by some successful grape-growers. Manufacturers of reaping-machines paint on the implement a conspicuous notice to "keep the knives sharp;" I wish that manufacturers of pruning-knives would engrave on them the motto, "Summer pruning weakens; winter pruning strengthens."

I received this morning a package of foreign horticultural periodicals, and in scanning them over I found a notice of a remarkable bunch of grapes which had been produced on vines that have been cut down annually, for purposes of propagation, since the year 1811; last year they were not cut down, hence the fruit. Although the plants are none the worse after forty years of "severe treatment," I will not quarrel with your correspondent, but admit that it *may* "eventually enfeeble the plant to an injurious extent."

LETTER FROM SWITZERLAND.

I CANNOT help thinking of my horticultural friends as I sit each morning at my window, and in the intervals of writing or reading look out upon the vineyard under it, watching the busy fingers of the Swiss women as they cut off the tops of the vines, or tie them neatly to stakes. The rich amber color of the berries, which are Golden Chasselas, and often as large as those of the Black Hamburg in our vineries, contrasts finely with the dark green of the leaves, and gives to the land culture here a charm scarcely known yet in our American culture. In truth, this Lausanne is a delightful place, situated as it is on a mountain side, and overlooking that beautiful sheet of water, Lake Leman. One of my windows opens upon the lake, and from it my eye can wander over sloping orchards, and vineyards, and pasture, down to the placid lake, and then again up to the distant mountains, whose sides have that inimitable tint of mountain-grey which is seen only in Switzerland, while their tops are often painted and gilded by the setting sun through as clear an atmosphere as our own in October. The climate at this season very much reminds me of our own, excepting that it is more rarified, and one can take more exercise with ease.

A favorite walk of mine is on the Berne road, where lives an English clergyman with a charming lot of children. The chateau in which he lives belongs to a noble family, who are resident at Munich. It is a beautiful

spot, laid out with winding walks through fine woods, with seats and temples, and subterranean galleries cut out of the solid rock, while from his window is a superb view of the lake and mountains. For this he pays the moderate sum of forty-six pounds sterling per annum, furniture included. There are hundreds of beautiful locations around it on which one can build, and a great source of amusement with me is to people every site.

As my hair grows grey I endeavor to discard some of the follies of youth, but there still stick by me some of my old castle-building propensities. I find myself taking possession thus of every charming spot, and building upon each a dwelling of ample dimensions—of Roman, Grecian, or Gothic architecture, whichever may be most in harmony. I have thus a home in the currant fields of Zante, among the pine groves of Cephalonia, on the picturesque hills of Corfu, among the lemon and orange groves of Palermo, upon the brow of Posilipo, all along Italy from Naples to the Lakes, and sundry others upon the heights and in the valleys of the Alps, where one can look upon snowy peaks, wander over glaciers, or eat September strawberries and mountain cream on the table land pastures. There is one great beauty about these homes of mine—I have no taxes or gardeners' wages to pay, no repairs to make, and no water-pipes continually out of order, but everything is perfect of its kind. These are all shadows, you say, but so it is with many things we value; as we grow older we discover that our realities were only shadows, and what we once deemed shadows are fast becoming realities.

But there is at all events something tangible about the fruits here, and I like to have an assortment of them upon my table when I write. My little market-basket sometimes makes a goodly show, and I have before me at the same time four or five sorts of pears, of which *Beurré gris* and *Duchesse d'Angoulême* are the best; nectarines, apricots, peaches, Green Gages, Alpine strawberries, figs, Cornelian cherries, mulberries of immense size and delicious flavor, several sorts of plums, Red and Golden Chasselas, with occasionally some Chasselas Musqué. Now do not think that I eat all these; I have with me some little mouths to which nothing of this kind ever comes amiss. The price of Grapes here is very reasonable, —about ten cents per pound,—and the grape-cure is in high repute. The vicinity of Lake Geneva is celebrated for the excellence of its fruit, and thousands come here at this season to go through the cure. Hard, isn't it? Just think of it—to be compelled to eat five to ten pounds of ripe Golden Chasselas every day! But one of the oddest customs they have here is that of allowing persons to enter the vineyards and eat as much as they choose. The charge for this is each time one or two francs, according to the quality of the fruit and the apparent capability of the man. I feel sorry for the proprietor who turns them out in such pasture. What would your neighbor Pratt McKean charge for entering one of his vineries in this way?

The vines here are all kept trimmed down to three or four feet, and they say the fruit is much finer than on a trellis where it must necessarily be more distant from the root. Being planted two and a half and three feet apart, a large number can be placed upon an acre, which is important where the soil is prepared at so great an expense as is requisite for grapes. They also say that the oidium attacks the fruit on trellises much more than on vines trained low to stakes. My own observations confirm the

truth of this. On the other hand the finest grapes at Fontainebleau are trained upon trellises. The cost of the vineyards here is something enormous. There are some near Vevay and Clarens, on hill-sides so steep as to require terracing, which have sold as high as twenty-five and even thirty thousand francs per acre, and with such an interest to carry they are said to be profitable. The whole country is covered with vineyards, and I have abundant opportunity of getting acquainted with their mode of culture. But my sheet is nearly filled, although this subject cannot be readily exhausted. With kind regards, believe me truly,

S. B. PARSONS.

Lausanne.

THE WHITE DOYENNE PEAR AND ITS ENEMY.

UNDER the above caption I detailed in your eleventh volume, Mr. Editor, my experience with, and views upon, the disease which attacks this variety, upon which you briefly commented, and suggested that experiments be tried with salt, caustic, soda, etc., as preventives.

Not remembering to have seen any notice of such experiments, I wish to inquire whether any have been made, and with what result?

The disease has with us become so prevalent, that the Doyenne is no longer considered worth planting by those who have grown it.

With the experience of two more years, I cannot say that I have learned anything new regarding the disease. Last year it destroyed nearly the whole of my crop, which was not large. This season it was a subject of remark that the Doyenne was unusually free from spots, and I congratulated myself upon the prospect of a respectable proportion of fair fruit, but a quantity being blown from the trees by the gales of September, were placed in a box to ripen, and came out in the usual manner, nearly every specimen more or less affected, and a large proportion a mass of bitter rot, very few being fit for use. Quite discouraged, I prohibited the remainder of the crop being brought into the fruit-room, but selected from the heap perhaps a peck of the fairest, and caused the rest to be disposed of in an unripe state for cooking purposes. The few selected specimens ripened without showing much indication of disease, but many of them were wanting in the pristine excellence of the variety in point of flavor.

I have been quite startled to detect symptoms of the same or a similar malady, upon the Seckel and Beurré Diel. It was confined to a few specimens of each, and did not exhibit the virulence or the contagious property so strongly marked in the Doyenne.

Has any one else observed other sorts than the latter, affected in this manner? I trust that this evil, already so serious, will not become more so by extending to other varieties, for pears will assuredly not be "profitable for market," if it should be generally prevalent.

JNO. B. EATON.

EDITORS TABLE

A CARD.

WITH the present issue of the *HORTICULTURIST* my connection with it as its Editor ceases. Undertaken at a time of great physical depression, it has been to me for four years and a half a source of amusement, pleasure, and instruction; but with returning health its duties require greater attention and devotion of time than I am disposed to give it; and in surrendering its duties entirely to the control of the publisher or his delegates, I trust that I am not parting with the many friends who have kindly been my contributors, and who have given me encouragement in many ways. In common with a large body, and of the older readers of the work especially, I shall always retain a wish for its continued success, and, while leaving it, ask from all its supporters a continuance of their interests and of the favor with which they have always received it.

Germantown, Pa., Nov. 20, 1859.

JNO. JAY SMITH.

THE present number closes the *fifteenth* volume of the *HORTICULTURIST*. Its long career has been accompanied by a very marked improvement in orchards and gardens, and a vast advance in our knowledge of the true principles of culture, no less than of landscape adornment. The period has been marked, too, by a great advance in the steam communications between distant countries, and the consequent easier introduction of new and valuable plants. China and Japan have yielded several products of universally acknowledged value or beauty, while in fruits superior to our own we have little to record. We seem in this country to have taken the matter into our own hands; while we reject nothing that will suit our climate, if it is superior to what we already possess, by raising seedlings, by hybridizing, and by searching the woods, we are getting around us the most valuable esculents. The great demand for pear trees caused a searching investigation into the merits of all kinds, and we are settling down to the few best. Grapes are undergoing the same process now; it would be safe to assert that from the multitude a small number of these, also, will in the end be all that we shall require. With a dozen pears and half a dozen open-air grapes, we could do very well, and to this complexion shall we come at last. Our standard of value is rising, but we know enough already to reject a large portion of those which have been attempted to be introduced. The Delaware, Rebecca, and Diana grapes will gradually take the place of our older sorts, wherever we have climatic influences for their successful ripening; what is wanted is the undisputable dicta of well-informed local societies, or single authorities, for each district of country. In pear culture, we shall learn in time what soil and climate shall be our producing section, with, probably, as much certainty as our grass and cotton regions. With grapes it will be necessary to consult climate especially, seeing that some do not come to a perfect state in one place, while they succeed perfectly in others. This knowledge is rapidly being diffused; the attention of the pomologists and of pomological societies will be more and more turned to this interesting topic; catalogues will convey the information we require, and our numerous journals will enforce it.

Since the establishment of the *HORTICULTURIST*, and the impetus it gave to the study of its topics, various periodicals have made a specialty of gardening and orchard culture; thus an increasing interest has been excited in the minds of the farmers—they are gradually surrounding

themselves with flowers and fruits. It must be confessed, however, that there is much room for further improvement in this respect.

Contemporaneous with these results is the vast increase in the number of nurseries and gardeners which marks even our frontier States. In this connection, the multiplied intelligence of these useful men, as a body, is evinced at their meetings, in their catalogues, and in the knowledge with which very many businesses are conducted. A good nurseryman or gardener can scarcely fail to be an intelligent and companionable man. He reads, reflects, and must be a close student to sift the true from the false in the mass that is continually presented to him. He has learned by experience that it is not always the *newest* that is the *best*; that to run after the "lo! heres" and the "lo! theres" is not always his true policy; he must, however, be always on the *qui vive* for the good and the popular, or he will be left behind in the race.

The HORTICULTURIST continues to receive the contributions of the active minds of the country, and if its usefulness is at all commensurate with the labor that has been bestowed upon its pages, the editor will be perfectly satisfied with the result. The publisher finds no cause of dissatisfaction in its moderate remuneration, though he would gladly receive still further evidences of its appreciation. Its number of readers was never so great as at the issue of this, its closing number of the fifteenth volume. With the steady advances in all the departments, from the kitchen-garden to the grapery and orchard-house, comes a steady increase of patronage, the public having ascertained that improvement in each will be rapidly chronicled, and no effort be spared to communicate all that is known and established. The publishing arrangements are more full and complete than ever before; and the acquisition by the proprietors of the entire stock of the agricultural and horticultural works of Mr. A. O. Moore makes this publication office "head-quarters" for all books connected with these departments—a result which will not be without its influence on the career of THE HORTICULTURIST.

RURAL CEMETERIES AND PUBLIC PARKS.—As we predicted some time ago, parks are becoming the great features in all cities of any importance. The great Central Park of New York has given the initiative, and awakened inquiry and conviction of their importance. Rural cemeteries are also springing up in every direction. Many of these, however, are hardly worthy of the name. It is, undoubtedly, difficult to produce a striking landscape effect in grounds so entirely devoted to purposes of utility, but it is *possible* to combine both to a very great extent. We learn that a cemetery company has recently been formed at Rahway, N. J., of which J. R. Shotwell is president. They have secured a most beautiful and suitable tract of land, embracing about fifty acres, well wooded, and supplied with water for lakes, fountains, etc. A design has been furnished by W. Saunders, of Germantown, Pa., who is now engaged in laying out the grounds. We venture to say that, as in all previous engagements in landscape gardening, Mr. Saunders will give entire satisfaction.

Mr. Howard Daniels has been laying out very judiciously the New Cemetery, Oaklands, at Syracuse, which was dedicated in the early part of November, with appropriate speeches and ceremonies.

GAZANIA SPLENDENS.—The *Cottage Gardener* says: "Ten thousand cuttings of one kind struck in a nursery on speculation are a sure sign that the kind must be really, practically, and substantially, a good plant, for which there is never any lack of customers. Let a plant be good, and it is sure of a sale; a bedding plant more sure and certain than all the rest. Well, then, *Gazania splendens* is sure to go to the ends of the earth; and if it could travel with the sun the whole distance, it would never shut its eyes the whole time; but it must have sunlight to keep it awake."

Of *Spergula* it adds: "The new grass, *spergula*, is all over our borders, and fields are laid down with it next the pond where they get the water from, and there is no doubt or hesitation about the thing answering to the very letter. On light soil it wants the roller often, but on solid clay hardly ever; but the more it is rolled the better it grows."

A BOTANICAL CHAPTER ON GRAPES.—“We take great pleasure,” says the *Farmer and Planter*, of South Carolina, “in calling the attention of our readers to the botanical essay on the different varieties of native grapes, furnished by our friend, H. W. Ravenel, Esq., of Aiken, South Carolina, (and inserted in the present number of the *Horticulturist*). There has been a great obscurity in the nomenclature of the vine, and our own State and Georgia have done much to “confound confusion” in this particular. The Lenoir, a grape originating in Sumter district, South Carolina, has been called in Georgia Black July, Thurmond, and Devereux; in North Carolina, Lincoln, whilst, in our own State, it is frequently confounded with the Herbemont. Our father received the Lenoir, more than thirty years ago, from the late Nicholas Herbemont, by its *true name* of Lenoir; and at the same time the Herbemont by its proper name. The Georgia cultivators gave the latter the name of Warren, but we think, in justice to the pioneer horticulturist and vine-grower of the South, it should bear his honored name. If no one else can make out a better title-deed to its ancestry than we can, we shall insist upon the name of Warren being discarded. The late Major Guignard, of Columbia, S. C., often told us, that the Herbemont was introduced into that city as early as 1798, and was propagated from a then old vine, growing on the plantation which recently belonged to the late Judge Huger. Of its origin, Maj. Guignard could tell nothing more, but being intimately acquainted with the neighborhood in which the original vine grew, repeatedly asserted that the above statement was entirely correct. This statement, of course, puts a quietus to the claim which various persons have made as to its paternity.

“We will heartily aid Mr. Ravenel in the work of investigation, and have several varieties, not enumerated, which we shall submit to him for classification. We hope that all persons having varieties not enumerated, will send vines or cuttings to him, during the winter. We congratulate the State on having, not only a correct, but such a working botanist, as Mr. Ravenel, amongst us, and we hope that he will repeatedly favor the public with his investigations.”

MR. CHARLES DUGGIN of New-York—who has lately contributed to our magazine some very tasty and well arranged designs for Villa residences—we are glad to notice, has been appointed Architect and Superintendent in building the New Plymouth Church, Brooklyn,—Henry Ward Beecher, Minister.

The auditorium of the Church will give accommodation in the pews for six thousand persons—an unprecedented capacity in this or other countries.

Unusual interest has been shown in this competition; we hear about twenty-five sets of plans were sent in, and being from the talent of the neighboring cities, as well as New York, no little credit is due to the successful competitor.

FISH PONDS.—Mr. J. C. Carmichael says: “It has now been about fourteen months since I built my first pond, and now I have three, with a fourth nearly complete. I estimate my fish by the million, many of which are, of course, very small yet. I expect to raise to the length of ten inches this year, ten thousand trout.

THE WATER that falls in England annually is 21, in New England 42 inches. There they have about 156 rainy days *per annum*, and we but 56. In England one inch in 24 hours is considered a great rain; but in New England six inches and seven-eighths has been known to fall in 24 hours. Ordinary arable soil is capable of holding nearly six inches of water in every foot of earth.

In the quarterly return of the rain in England, ending with June, it is stated “the deficiency in the fall from the beginning of this year is $1\frac{3}{4}$ inches. The deficiency in the years 1854, 1855, 1856, 1857, 1858, amounted to more than the average fall of one year, viz., 25 inches. From a careful examination of the fall of rain (year by year) from the year 1815, it would seem,” says the report, “the annual fall is becoming smaller, and that there is but little probability that the large deficiency will be made up by excess in future years.” This is a most important discovery,

confirmatory of an opinion that has been before mooted, that the quantity of rain which falls on the earth is very slowly and gradually diminishing. In all countries traces of dried up streams are met with, while within the historical period there are few or no examples of new rivers coming into existence. The river Dnieper is drying up. The plains of Troy can with difficulty be recognized, because the rivers mentioned by Homer, whose descriptive topography is not doubted, either cannot be found or are now such insignificant streams as to fall far below the descriptions of the poet. It is known that about the mouths of the Nile the water is becoming shallower. The Baltic is known by recorded observation to be decreasing. The Adriatic derives its name from a town that is now eighteen miles from the shore, and was once a flourishing sea-port. North America is sensibly draining; on the Pacific it is notoriously rising, or the ocean which surrounds it is sinking. The Deluge is a very early event in the history of mankind, and it is consistent alike with sacred and profane history to suppose that ever since that period, as well as immediately after the first few days when the dove found her resting-place, the waters of the earth have dried up.

A theory has lately been started that the globe is continually increasing in size. If this be true, it is gradually, though extremely slowly, decreasing in fluid matter and increasing in solid matter. Most of the changes which geology traces in the crust of the globe have been in progress for many ages, and from the light which the gradual diminution reflects on many geological phenomena, the announcement must be considered one of the most momentous discoveries, should it be extensively confirmed, that observation has ever made.

DEATH OF DR. JOHN P. BARRATT.—Since our last issue, we have heard the melancholy tidings of the death of this devoted friend of horticulture, rural art, and the natural sciences. Dr. Barratt was a native of Great Britain, and emigrating early in life, he selected Abbeville District, South Carolina, as a permanent abode; where, in addition to the successful practice of his profession, he soon became conspicuous as a horticulturist and planter. He loved botanical labors as an enjoyment, and even devoted to the introduction of new plants, he contributed to choice exotic and desirable native varieties, the fields of the beautiful. Every department of natural science has been enriched by his researches. He was the friend of Audubon, Bachman, Torrey, Agassiz, and other eminent savans. In the pursuit of his favorite studies he neglected no object which could in anywise aid his co-workers in their researches, and as a contributor of specimens of botany, ornithology, and geology, both to individuals and institutions, was liberal and self-denying. He will not be missed by the scientific world alone, but, the friend and benefactor of all classes, his place will not soon be filled. Dr. Barratt was more generally known by his connection with agricultural progress in South Carolina. He was one of the wise trio who, in 1855, published that appeal to the people on the subject of a State Agricultural Society, which resulted in its formation and permanent endowment. An appreciation of this eminent service was evidenced by the initial convention which called upon him to preside over its deliberations, and he has, ever since the organization of the Society, been one of its honored vice-presidents. He lived to see the fruition of his hopes, and, blessed with a reliant faith, he is now reaping the reward of the good man who has performed his duty to his fellow-men. He rests in peace.—*Farmer and Planter, S. C.*

FLOWERS IN WINDOWS.—There are no surer tests of a happy home within, than the flower-decorated window and neatly-kept garden; and there is no occupation for the leisure hours more calculated to keep it so, or to soothe the mind. It yields pleasure without surfeit; the more we advance, the more eager we become. And how unlike this to most of our worldly engagements. To those blest with children, how delightful it is to bend their young minds to a pursuit so full of utility and intellectual instruction, combined with the advantages usually accompanying industry; and in children, carefulness and thought about their plants will lead to the same feelings respecting other matters.—*Correspondent of the Builder.*

A NEW FRUIT—THE CHINESE SAND PEAR.—We have just ripened the Chinese Sand Pear, says a Southern gentleman, which, in addition to its great beauty, bids fair to be a very useful variety of fruit. It was imported from China, we were informed, and the few specimens which were matured in the North cracked very badly. With us it is the most beautiful production afforded by the orchard. In shape globular, obtuse pyriform; size large; skin golden yellow, dotted over regularly with russet specks. When fully ripe its flesh is crispy and tender, with a peculiar flavor, resembling that of the quince. It is an admirable baking and preserving fruit. The tree is very ornamental and vigorous, with large, dark luxuriant foliage, and it grows well, both on the pear and quince stocks. The only drawback is its very early blooming, which frequently causes the failure of the crop. It will, however, be admirably adapted to the more southern regions of our country, where pears do not flourish well. We know nothing of its origin, further than that we received it as imported from China, and its *habit*, as well as novelty of appearance, proves it a "tree celestial."—*Southern Paper*.

RASPBERRIES.—Mr. Bateman presented at the Ohio Fair fine ripe clusters of the Catawissa and Belle de Fontenay raspberries, from the Columbus Nursery, for which a premium was awarded him at the fair. He remarked that these two were the only fall bearing varieties that he had found sufficiently productive to be valuable in this climate. Of these the Catawissa was the most productive—in fact the bushes were at this time loaded down with the fruit, and would continue bearing till stopped by hard frost. The berries of a purplish red color, fair size and quality, rather too soft for carriage to market. The Belle de Fontenay was rather more sensitive to heat and drought, hence not so sure a crop in this climate, but in favorable soils and seasons it produced finely, and the fruit was superior in color and quality to the Catawissa. Another French variety, the Merville de Four Seasons, had not done well with him—would not stand the heat and drought of summer.

Dr. Warder said his observations around Cincinnati agreed with the remarks of Mr. Bateman. The Belle de Fontenay and Catawissa had done very well there, but not the Merville. He said the Catawissa had been described in the books as very nearly resembling the Black Cap, which was an error—both fruit and plant differing materially from that variety, although having some more resemblance to it than varieties of the Antwerp class, especially in the mode of propagation, which is by layers of the tips or by cuttings of the roots—not by suckers.

A SHELL GROTTO.—The following description of a grotto at Goodwood, Eng., possesses interest :

"Within an inclosure there is a shell grotto of architectural design and admirable workmanship; its length including an alcove or recess is fifteen feet six inches, its breadth is ten feet six inches, and the height to the top of the coved ceiling is nearly eleven feet. The lines of its cornices and plinths, as well as those of the pilasters, arches, and niches, are of a purely Grecian character; the whole is covered with myriads of shells, of various colors and sizes, and all is arranged so as to preserve intact not only the severe geometric lines, but also to form panels of coloring on the walls, from which vases, wreaths, and cornucopias of flowers project—exquisitely formed of the same beautiful material, conferring a certain degree of taste and finish on the whole apartment. The niches are filled with mirrors, and the floor is composed of black and white marble with panelling of horses' teeth. The whole was executed previously to the year 1850 by the delicate hands of Sarah the second Duchess of Richmond and those of her two daughters, exhibiting a degree of patient skill and untiring industry altogether unequalled, and one sees with regret the inroads that the silent hand of Time has already worked on this unique and superbly finished structure."

ZANTE CURRANTS.—The Patent Office is in receipt of a lengthy and interesting communication from Samuel B. Parsons, an experienced nurseryman, of Flushing, N. Y., who is now travelling in Europe, concerning the Zante currants. During his tour, he visited the Ionian Islands, and acquainted himself with the mode of cultivation, climatic necessities, and the method of drying and packing this fruit; as well as the diseases incidental to the plants, and

profits arising from its cultivation; of all which he informs the Patent Office in detail. He also urges the importance of attempting the introduction of the fruit into this country. The agricultural department of the Patent Office did, however, introduce a great quantity of the vines last year, which were widely distributed in the Southern States and in California, and from which the happiest results are anticipated.—*Star*.

[We have several vines of these currants, or rather grapes, growing thrifty at "Vineland," and hope to gather fruit from them next year.—ED. SOUTHERN CULT.]

CHILDS' SUPERB GRAPE.—Mr. J. C. Hastings, of Clinton, N. Y., has roots of this *very fine Grape* for sale. He has forwarded samples of the fruit.

C. B. RICHARDSON, New York, publishes this week a second and enlarged series of "American Historical and Literary Curiosities." By John Jay Smith. Large Quarto.

ALLEN COUNTY HORTICULTURAL SOCIETY, Fort Wayne, Indiana.—Officers: *President*, J. D. G. Nelson; *Vice Presidents*, M. W. Huxford, Thos. Covington; *Treasurer*, O. W. Jeffers; *Secretary*, H. C. Grey. Organized the present season. Weekly meetings are held for discussion and mutual improvement.

CATALOGUES RECEIVED.—Descriptive Catalogue of a selection of Roses, cultivated and for sale by John Saul, Washington, D. C.; excellent.

The Covington Nursery, Covington, Ga. Catalogue of 1859-60, by Henry Camp & Son. Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, and Greenhouse Plants, cultivated and for sale by W. L. Ferris, Throgg's Neck, Westchester Co., N. Y. Correct and full.

Wholesale Catalogue of Fruit, Evergreen, and Ornamental Trees, Shrubs, Stocks, &c., 1859-60; offered for sale by John Saul, Washington, D. C.

Catalogue Général des Plantes disponibles de Portemen Fils, à Gentilly, Seine, automne 1859 et printemps 1860.

Prince's Descriptive Catalogue of Foreign and Native Grape Vines, Flushing, N. Y., 44th ed. Etablissement Horticale de Transon. Forteau et Fils A Orleans (Loiret). Prix courant pour 1859-60.

Illustrated Annual Register of Rural Affairs for 1860, with 180 engravings; No. 6. Albany, Luther Tucker & Son; New York, C. M. Saxton, Barker & Co. 1860.

The Cincinnatus, published at College Hill, Ohio, is now edited by F. G. Cary, A. M., J. A. Warder, M.D., and W. H. Ongley; a strong party.

Descriptive catalogue of Roses, Camellias, Dahlias, Geraniums, Verbenas, hardy evergreen trees, vines, shrubs, bulbs &c. By J. W. Jones, Charleston, S. C. A very handsome and satisfactory list. Descriptive Catalogue of Fruit Trees, Grape Vines, Roses &c. By C. C. Langdon, near Mobile, Alabama.

Address delivered before the Aiken Fruit Growing Association, by M. W. Ravenel, Columbia, S. C.; very creditable and informing.

Catalogue of Ornamental and Fruit Trees, Evergreens, Shrubs, &c.; cultivated and for sale by Samuel Feast & Sons, Baltimore, Maryland. Carefully considered and well prepared. Messrs. Feast are now prepared to receive orders for Feast's Fillmore Strawberry.

Descriptive Catalogue of Fruit and ornamental Trees, &c. By F. Trowbridge, New Haven, Ct. Catalogue Général des Vegetaux. E. Desfosse—Thuiller, A. Orleans, France.

B. K. Bliss' Autumn Catalogue of Bulbs. Springfield, Mass.

John Kolber's second importation of Hungarian Grape slips, embracing 21 of the choicest varieties of table and Wine Grapes, suitable for out-door culture in the U. S., 592 Broadway, New York.

Statistical and Historical account of the County of Addison, Vermont; written at the request of the Horticultural Society of Middlebury, by Hon. Samuel Swift. Price 50 cents. Published by A. H. Copeland, Middlebury, Vt.

Gossip.

MARKS ON BARKS, &c.—In 1800 M. De Candolle had cut down, in the forest of Fontainebleau, a trunk of a Juniper (*Juniperus communis*), which was found to present, near its centre, a layer which had been affected by frost, covered over by ninety-one woody layers, and which dated, therefore, from the severe winter of 1709.

An inscription written upon the trunk of a tree, and which penetrates to the alburnum, is covered over by the new woody layers, and may be found entire as long as that part of the trunk remains so. It was thus that Reisel found, in 1675, some capital letters in the middle of a beech; that Mayer, in 1688, found in the woody body of a beech a kind of sculpture representing a gallows, and a person hanging; that Albrechti, in 1687, found in the same tree the letter H, surmounted by a cross; that Adamni found, under nineteen layers of the alburnum, the letters J. C. H. M. It is thus that in certain trees in India there have been found inscriptions in the Portuguese language, which had been written there some centuries before, when the country was discovered by those navigators. It is thus that different spots, or regular stars, have been artificially formed in the middle of several trees. Two Mémoires by Fougereux de Bondaroy, inserted among those of the Académie de Paris for 1777, may be particularly consulted upon this subject.

CONTORTED TREES.—From the extension of the woody fibre being greater and longer continued on one side of a stem or branch than on its opposite side, it frequently becomes contorted. Gardeners usually endeavor to remedy this by making an incision on the inner side of the curvature, and then employing force to restore it to a rectilinear form, causing a gaping wound, and mostly failing to attain the object. If the incision be made on the outer side of the curve, thus dividing the woody fibres that continue to elongate most rapidly, the branch or stem, with but slight assistance, will recover its due form, and there will be no open wound.

From the fact that there is invariably more woody matter deposited on the side of a stem or branch which is most exposed to the air and light, gardeners have explained to them why those sides of their trained trees which are nearest the wall, ripen, as they term it, most slowly; and are benefited by being loosened from the wall so soon as they are relieved from their fruit. If they require any demonstration that this explanation is correct, they need only examine the trees in clumps and avenues; their external sides will be found to enlarge much more rapidly than their internal or most shaded sides.

CHANGE BY CULTIVATION.—At the late meeting of the British Association, Dr. Lankester laid before the Society a report by Prof. Buckman "On the Growth of Plants," in which it was stated that the author was continuing his experiments on the influence of cultivation in altering the specific character of plants. Several instances were given in which the character of a plant was so much changed by culture as to lead to the supposition that certain forms which had hitherto been regarded as distinct species were only varieties.

MESPILUS JAPONICA.—This early fruit would prove a valuable one for orchard houses. It is a Medlar of superior excellence, making its appearance in New Orleans fruit stores in April. The plant and flower are both sufficiently ornamental to give it a place independent of its valuable fruit.

HARDY AQUATIC PLANTS (suitable for a small tank in the house or open air).—*Aponogeton distachyon*, four inches. *Butomus umbellatus*, two feet. *Hottonia palustris*, floating. *Menyanthes trifoliata*, one foot. *Ranunculus aquatilis hederacea*, six inches. *Nymphaea odorata*, four inches. *Hydrocotyle vulgaris*, one foot.

GREENHOUSE AQUATIC PLANTS (suitable for a small tank.)—*Aponogeton distachyon* and *A. monostachyon*, small plants. *Calla Æthiopica*, tall plant. *Polygonum amphibium*, nine inches. *Villarsia nymphoides*, six inches. *V. laminosa*, nine inches. *Hydropeltis purpurea*, six inches.

KEW GARDENS.—The flower gardens at Kew were the great social question round London all the past summer; they were in everybody's mouth, and Parliament at last yielded to the old adage, that "what everybody says must be true," and granted thirty thousand pounds sterling for the authorities at Kew to spend in such a way as to keep the gardens up to their character of "the best gardens in England, or in all Europe." Think of a hundred and fifty thousand dollars appropriated in one season!

OLD GERANIUMS.—The way to winter the great old Geraniums is to take off all the leaves, pack as many of them in as large pots as you can cram the roots into, keep them all but dry when they have light and no frost.

Correspondence.

MR. EDITOR.—The following I take from the newspapers, where it has been extensively published:

"The Agricultural Bureau of the United States Patent Office have received intelligence of the shipment from Havre, France, of a large swarm of Lombardy bees. These bees will be sent upon their arrival here direct to the Agricultural Bureau. They are of a larger size than the ordinary bee, and having a longer bill, are able to suck flowers inaccessible to the American bee. The product of an old hive of these bees is sometimes 150 lbs. of honey in one season. These bees will not be disturbed until 1861."

This will be news to many a *bee-holder*; I hope it will not give our public an opportunity to *bee-rate* our "Bureau;" at all events it must *bee* evident that the public must pay the *long bill* which will *bee* presented. I should not like to *bee* placed in the bureau's *Bee-Attitude*.

We handed the above to a young friend, who says: "Our correspondent should *bee* sure *ee-fere* he condemns or miss*bee*haves; the honey may *bee* better than ours, but it is probable 'disturbed' meant distributed; at the first disturbance may we all *bee* there to see. When a swam *bee-takes* itself to any of your friends, I hope they will measure the length of their "stings" *bee-fere* they *bee-rate* them; but it will *bee* best to *bee-ware*, or sad distasters may *bee-fall* *bee-fere* they *bee-taken*."

Frank.

Another says: "All this is anticipatory till we see that they really are *bee-comers*, for at present they are only *bee-ginners*; as we hear only of intelligence of the shipment they can hardly *bee* said yet to *bee-gee*-otten; can the announcement *bee* meant to *bee-guile* *bee-fere* they are *bee-held*? Is there no danger that ship has left them *bee-kind*? In whose *bee-half* are they to *bee* distributed? If they arrive this winter may they not be *bee-lated*? Is the paragraph intended to *bee-little* the bureau? What will the hive *bee-like*? We live under a government which is truly

Bee-nificent."

Still another continues the strain: "Allow me to put in for a first

Bee-speak."

Again says a Bostonian: "I have plenty of room when you have any to

Bee-stop."

An enthusiast closes with the hope that if there are many applicants he may come in

Bee-twixt.

What sort of a noise do the long bills make? Something no doubt—like a

Bee-wail.

Our correspondents are either *bee-wildered* or *bee-witched*.

I WAS quite discomfited yesterday, to find, upon unwrapping a fine specimen of Easter Beurre, which I had promised myself the pleasure of sending you, that it had begun to decay, in conse-

quence of injuries sustained at a recent exhibition, (where it was one of the best 12 winter pears of one variety.)

I therefore send you the outline and measurement. The weight was a trifle short of a pound. It was grown upon a *dwarf* tree, which bore at the same time, a *good crop*, of very fair-sized fruit, some quite large. This one was the largest that I have grown, and I think the largest ever shown here—perhaps you Philadelphians grow larger ones, *we* don't.

I like the pear very much, but with me it does not *keep*; I think that I never kept one until Christmas, and rarely many beyond the first of December. Some people say that it is difficult to ripen; I wish it didn't ripen *quite* so easily! I ate a very fine one at E. & B's. once on April 22nd, (if I do not forget,) and was told that no extra care was taken to preserve them; so it *does* keep in some places.

Truly,

Buffalo, Nov. 11, 1859.

J. B. E.

ED. HORTICULTURIST:—There, sir, is a drawing of it—my invention. I feel the pride of an inventor; and I say “hands off” to all cunning and acquisitive Yankees; for I mean to apply to our good uncle Samuel for a patent. In the meantime I will allow every good and devoted horticulturist to make use of it. It is a fruit-gatherer, and in a moment of inspiration, leapt perfect from my brain, like Jupiter from the head of Minerva. I have heard and read of other fruit gatherers, but they are all, to my mind, complicated, defective, or tedious in their use. Mine I take to be faultless; and such is my opinion after one season's use of it. It is very simple—a strong wire is bent in the form (*a b c d*) as shown in the figure. A bag (*d f g h*)



is attached to it. The jaws of the wire (left long) are *securely* attached to a common cane fishing rod, (*k d*), of any desired length. The expanded portion of the wire is passed over the fruit; and a slight shove secures the stem of the pear or apple in the *jaw* (*a b*) of the wire. In nine times out of ten this breaks off the fruit—should it fail, a slight twist, right or left, is sure to break it off. The gatherer may thus *fish* for his fruit, and never fail to catch at least one, with a very small bag. Should he prefer to work faster he may make the bag large enough to hold as many fruit as his pole will sustain.

For *cheapness*, *simplicity*, and efficiency, my tackle is hard to beat.

Chillicothe, Nov., 1859.

GEO. WASHINGTON GRUBB.

ALOES AS AN INSECT SLAYER.—I see you are alluding to Aloes for destroying insects! and I can assure you that I have not used anything else for the purpose, during more than a year past, and I have a friend who has done the same. We soak a pound of Barbadoes Aloes in two quarts of hot water, then add cold to make it up to six gallons. With this liquor you may

dip or syringe as you like. Small plants I dip in the tub; and the large ones I syringe, leaving them for a day or two, then washing them afterwards with clean water. It is excellent for fruit trees till the fruit sets, and then the Aloes are apt to make the fruit taste. I have not used any tobacco for any plant since I tried this.—*T. L.* (Others differ from *T. L.*—ED.)

MEASURING THE HEIGHT OF TREES.—A correspondent asks how to find the height of trees, &c. The following plan is the *ne plus ultra* of simplicity: Cut a triangular board to an angle of 45°; support the base of it on a stick at the height of your eye, placing a common level along its base, to keep it horizontal. Then walk away from the tree, taking the whole apparatus with you, till your eye, looking up the sloping side, strikes the topmost twig. The distance from your stick to the tree's base, measured along the ground, *plus* the height of your eye from the ground, is the total height of the tree. CRUX.

P. S.—A clever fellow will see how to make a plummet and line do instead of a level.

MR. EDITOR.—*Dear Sir*:—Enclosed I send you a small specimen of an extraordinary seedling Verbena—the size of the individual flowers and the thyrse-like racemes upon which they are borne, surpass all that ever came under my notice. The color is a great improvement upon “Geant Des Batailles,” with a rich, dark velvety crimson eye; the foliage is also remarkably fine, and sinuate to a remarkable degree. (Very fine.—ED.)

It has been asserted that it was impossible to fertilize the *Verbenæ*. I have *thought differently*, and was determined to make a trial; the only way open to my mind to fully prove the matter was to be fully convinced of the possibility or impossibility of effecting the crop by producing a variety dissimilar to anything yet produced. Nine-tenths of the *Verbenas* imported from England have conspicuous *white* or *lemon-colored* eyes. My idea was to produce a variety with a dark eye. How far I have succeeded the specimen will show.

The enclosed pansy blooms are seedlings—*Tree, American Born Citizen*. I have heard much of your Philadelphia pansies; if you have any finer than these, please inform me. (None better.—ED.) I am yours truly and respectfully,

DANIEL BARKER.

West Meriden, Conn.

PRAY, my dear Mr. Horticulturist, what led the learned body to which you belong to change *Thuja* to *Thuja*? If a change was demanded, why did they use *j* rather than the more obvious *i*? Does the change involve a change of sound? I ask because I heard lately from a gardener—teacher of gardeners—that “*We* call the plant *Thuja*; (the gardener was wrong.—ED.) he giving a consonant sound to *j* as in jam. Is this true for *all we*? I do not know, for I am familiar with the name only as written. *Arbor Vitæ* is the only name I hear spoken; but euphony forbid that we amateurs who like to show off our learning occasionally, should be forced to give up a sweet sound for a harsh one. The French pronounce the word only as I hope we ought; although they have, as we have, two modes of spelling, *Thuja* and *Thuia*; this latter being an exact transcript of the Greek name of the sweet-smelling wood used for burnt sacrifices, supposed to be one of the genus *Thuja*.

Be so kind as to enlighten “one of your parishioners.”

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, and packages by Express, should be uniformly directed to C. M. Saxton, 25 Park Row, New York.

